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By-Holthaus, Gary H.
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Eskimo youth in Bristol Bay, Alaska, caught between the clash of native and white cultures, have difficulty identifying with either culture. The curriculum in Indian schools in the area, geared primarily to white middle-class standards, is not relevant to the students. Textbooks and standardized tests, based on experiences common to a white culture, hold little meaning for Eskimo students. Teachers unfamiliar with Eskimo traditions and culture are unable to understand or communicate with the native people. Since the existing curriculum in Bristol Bay schools ignores the students' cultural background, the author considers the creation of a unified multi-semester social studies curriculum about the native heritage as a method of dealing with students' problems. This paper, as a first step in creating such a curriculum, can serve as a source material for information about the Bristol Bay area, and is directed toward the development of a one semester secondary level course in native history and culture. A major portion of the paper consists of material about the history, geography, anthropology, archaeology, language (Eskimo and Aleut), and folklore of the area. The concluding chapters contain a suggested course outline, sample lesson plans, and a list of native resource persons. [Not available in hard copy due to marginal legibility of original document.] (TL)

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TEACHING ESKIMO CULTURE TO ESKIMO STUDENTS:

A SPECIAL PROGRAM FOR SECONDARY SCHOOLS IN BRISTOL BAY

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Gary H. Holthaus

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CHAPTER I

INTRODUCTION

The people of Bristol Bay find themselves surrounded by a series of influences that have an unusual effect on the educational processes in the area. Bristol Bay is geographically isolated from the rest of the United States. Communication does exist, but contacts with the outside world are limited in ways that they are not limited in most other sections of the country. The people themselves are of many backgrounds. There are natives who have been born and raised in the area, representing vestigial remnants of a former culture that subsisted on the products of the sea, spoke a unique language and adapted to the environment of Bristol Bay with consummate skill. There are also representatives of a white culture of Anglo-European origins that has intruded upon Bristol Bay since the turn of the century. The white culture has focused its attention primarily upon the exploitation of the fishing bounty afforded by the red salmon runs of Bristol Bay. The coming of the canneries marked the beginning of the end of the native culture in this part of southwestern Alaska. Geographical isolation, and the clash between the two cultures, native and white, have left their mark upon the students of Bristol Bay.

The young people of the area reflect the pull between two varying cultures in several ways. Caught between the white and native cultures, they feel the attractiveness of white ways, but cannot totally escape the old ways, even though much of their heritage has been denied them by ignorance. They do not write their old language. Transmission of their heritage depends upon oral tradition, but many of the young people do not speak the language of their fathers and grandfathers.

The result is that in a peculiar way they are lost. Education does not mean much, for they have no more sense of orientation toward the future than they have toward the past. They do not realize that education can be a benefit. It does not help them catch more fish, for one does not learn fishing techniques by studying verbs and subjects, world history, Spanish, typing, chemistry and algebra. Therefore education does not seem to have any valid purpose. A survey of Alaskan native secondary school dropouts revealed that,

> If the curriculum taught in the schools does not have a realistic function in the students' society (i.e., is not geared to his future economic potential), it is likely that there will be little motivation to endure the sacrifice associated with the pursuit of an education.[1]

In a village where fishing is the primary occupation, education does not seem to "have a realistic function." In the local community there is little or no opportunity to better one's economic status by means of an education.

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[1] Charles K. Ray, Joan Ryan, Seymour Parker, Alaskan Native Secondary School Dropouts, (College, Alaska: University of Alaska, 1962), p. 85.

There is no pride in the native heritage. Many seem to be ashamed of the fact that they are native and try to hide it. On the other hand they are not considered by others of their group to be white. They are trapped; suspended between a past that is remote, and a future that is only a vague puzzle. The findings of anthropologist Seymour Parker about the students at Kotzebue would also apply in Bristol Bay and many other areas of Alaska.

> In a sense the youth of Kotzebue are at a crossroad; they are thinking increasingly in terms of becoming members of the larger American society. At the same time, however, they are confused about what they should accept and reject in Eskimo culture, and they are dubious about the degree to which they will be accepted in white society. Many of them are experiencing doubts about their ability to compete successfully in a relatively strange environment.[2]

In Bristol Bay students of all ages are aware of the problem they face in regard to identification with one or another of the two cultures present. Sometimes there is a division within a family in attitudes toward this problem. One boy, conversing with his teacher, made the comment that he couldn't see why some kids seemed ashamed of being native. He added that he was part native himself and it didn't make any difference to him. The boy's sister was also in the classroom and heard the discussion. She shouted, "_______, you ain't native." A student caught this way cannot assert his native quality without risk of disapproval from his peers; neither can he deny it with honesty and integrity. He knows he is native. Telling him to forget it does not make him white.

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[2] *Ibid.*, p. 181.

Until 1964 there were only radio and printed news available to residents of Bristol Bay. The newspapers are received an edition late. In 1964 television was introduced through an Air Force station located in King Salmon. This has opened a whole new world to people in the area. Things they had never heard of before are presented in pictures on television. Many things they have heard about, but never had an opportunity to see, have become commonplace.

Nevertheless, the region is radically isolated from the outside world. It is accessible only by air for much of the year. In the summer, during the months of June and September, freighters come into the bay and anchor. They drop supplies to lighters which bring them into the Naknek River for distribution to the three villages located along the river. The only airfield capable of handling large freight or passenger aircraft is the Air Force station at

King Salmon. Wien Air Alaska is the only regularly scheduled airline into King Salmon during the winter. In summer seasons Western Airlines also comes into King Salmon, and Reeve Aleutian Airways stops on occasion. The climate of the area, however, precludes flights on several days each year. Although travel to other towns in the area is getting more commonplace, it still is an event to go to Anchorage, the nearest large town, about an hour and a half by air from King Salmon. Most of the school-age children do not get to make this trip until they are in their teens. Occasionally they go to Dillingham, a twenty minute flight, to receive medical attention or visit relatives, but other travel beyond the immediate vicinity is limited.

The problem caused by this cultural and geographical isolation has been recognized in many areas of the state of Alaska. It is a problem, not just in Bristol Bay, but in the many villages that have native populations extending from the northern-most arctic Eskimo villages to the Indian villages of southeastern Alaska. The situation has been described by the staff of the Anchorage Daily News in a book called _The Village People_:

> Most of Alaska's 50,000 Eskimos, Aleuts and Indians live in the villages. Some areas, some villages, are advancing under their own power. But the vast majority are not, particularly on the western coast and in the interior.

> The population is increasing rapidly in an area where subsistence living--the historic life of the North--is consistently more difficult. The native can no longer live in the old way. And as he and his children become more acquainted with modern civilization, the old way no longer seems desirable.
>
> In these areas poverty is a way of life--perhaps as deeply embedded as in any place under the American flag. Welfare checks take the place of jobs. Though there are schools, educational achievement is low. Alcohol and tuberculosis take a tremendous toll. Most homes are substandard. There is a high expectancy of failure among the population.[3]

The native student is removed from the native way of life, but he has not fully entered the white culture and so is unprepared for much that assaults him in the strange atmosphere of school. Lee H. Salisbury, of the University of Alaska, describes the native student as he attempts to learn from a standard grade school text:

> ...(the student) enters a completely foreign setting--the western classroom situation. His teacher is likely to be a Caucasian who knows little or nothing about his cultural background. He is taught to read the "Dick and Jane" series.
>
> Many things confuse him: Dick and Jane are two white children who play together constantly. Yet he knows that boys and girls do not play together and do not share toys. They have a dog named Spot who runs around yapping and does not work. They have a father who leaves for some mysterious place called "office" each day and never brings any food home with him. He drives a machine called an automobile on a hard covered road called a street which has a policeman on each corner. These policemen always smile, wear funny clothing and spend

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[3] Staff of the Anchorage Daily News, The Village People, (Anchorage, Alaska: The Daily News, 1966), p. 43.

> their time helping children across the street. Why do these children need this help?
>
> Dick and Jane's mother spends a lot of time in the kitchen cooking a strange food called "cookies" on a stove which has no flame. But the most bewildering part is yet to come. One day they drive out to the country which is a place where Dick and Jane's grandparents are kept. They do not live with the family and they are so glad to see Dick and Jane that one is certain they have been ostracized from the rest of the family for some terrible reason.
>
> The old people live on something called a "farm" which is a place where many strange animals are kept--a peculiar beast called a "cow," some odd looking birds called "chickens," which don't seem to fly, and a "horse," which looks like a deformed moose.
>
> And so on. For the next twelve years the process goes on. The native child continues to learn this new language which is of no earthly use to him at home and which seems completely unrelated to the world of sky, birds, snow, ice and tundra which he sees around him.[4]

There are some who say that the Alaska native should not be encouraged to join the white culture which he sees about him. Schools and other institutions should forego their efforts to make something other than primitive natives of these people. But this is not possible, and hardly fair.

> The Alaska native is also a living, breathing human being who has been touched by Western civilization. And like people from Sarawak to the edge of the Sahara--people who have lagged behind the advancement of human knowledge--he is increasingly anxious to share in the wealth and opportunity he sees about him.

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[4] Lee H. Salisbury, "Communication and the Native Student," The Alaska Review (Anchorage, Alaska: Alaska Methodist University, Vol. II, No. 2, 1966), p. 15.

> Some Alaska natives successfully have made the transition from the old culture to the new. Most have not, despite the tens of millions of dollars spent annually by the federal and state governments in their behalf. Many live in conditions that match or surpass urban U.S. slums. Their educational progress remains well below that of non-natives who share Alaska with them. Jobs are scarce in the villages and job opportunities are not much better if they move to a larger settlement. The welfare check, in many cases, is a way of life.
>
> But since the first whaling vessel reached the Alaska coast, the native has been increasingly unable to retain the purity of his culture. The past is fast closing in behind him. The future is not rapidly opening before him.[5]

Regardless of the difficulties, native people have a right not only to desire a place in the majority culture of their country; they have a right to active participation in that culture so they may find a place that has meaning for them. This will require the sacrifice of many long-cherished values and many of the traditional ways of their older society. "Such a process must be a voluntary one; still there are myriad evidences to support the claim that the people themselves desire the change."[6]

The impact of these circumstances on the average student can be marked by a low level of aspiration. His whole situation conspires to defeat him before his life is well begun. He has little hope of bettering himself in the future.

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[5] Anchorage Daily News, _op_. _cit_., p. 11.

[6] Ray, Ryan, Parker, _op_. _cit_., p. 269.

In fact his old cultural pattern tells him that he should be as good as--but no better than--his father in the various masculine skills. Therefore he hopes to be as good a fisherman, as good a hunter or trapper, as well-educated as his father; but he has no desire beyond this. Educators need to be aware of this cultural force on the formation of the students' attitudes, and levels of aspiration. Children from differing socio-economic levels in a community differ in eagerness and aptitude for learning pursuits, according to Bernard.

> Much as we dislike the notion of social class in a democratically oriented America, the fact is that membership in a given social class provides privilege for some and imposes deprivation for others...lower class pupils absorb from parents a skepticism about education that imposes the double problem of adjusting to another culture and adjusting to the curriculum....[7]

In the Alaskan research on dropouts, interviews showed that inferiority feelings may bring an end to education altogether, and that the negative effects of the way we have psychologically undermined these people through our educational programs may cause early dropout from school.

> ....self-images of these students were imbued with deep feelings of inadequacy and inferiority. Such a devalued student image was very prevalent, and its existence was confirmed by many teachers. Both teachers and native students noted that one of the important

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[7] Harold W. Bernard, Psychology of Learning and Teaching (New York: McGraw Hill Book Company, 1965), p. 379.

> reasons for school dropouts and the lack of motivation to enter high school stemmed from students feelings of inadequacy in dealing with the difficulties of the curriculum. This deep-seated, negative attitude is often transmitted to the student early in his educational career while he is trying to learn strange and often meaningless facts in a language over which he has little command.[8]

The negative self-image is reinforced by both the promotion system in the schools and by the teachers.

> A study of 760 elementary school dropouts by Overstreet revealed that "49 per cent of these students had been retarded _five or more years and that only one per cent were at normal grade placement_."[9]

Another seven per cent were nine or more years retarded.[10]

The teacher, too, often reinforces the feelings of inadequacy. Expressions such as "dumb native" are too common to be other than tragic. Often the teacher is led to believe this stereotyped image by the results achieved on standardized tests which are designed to be given to middle-class, American, white children in other states. One example of this will suffice. A reading readiness test shows some automobile tires and asks students to identify what kind of vehicle they belong on. All the members of one first grade class answered that they belong on a boat. A child outside

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[8] Ray, Ryan, Parker, _op. cit._, p. 259.

[9] William Overstreet, in a conversation with Charles K. Ray, July 10, 1962, cited by Ray, Ryan, Parker, _ibid._, p. 44.

[10] _Ibid._

Alaska knows that tires belong on cars, so according to the test answer, Bristol Bay students were wrong. A teacher who does not have an understanding of local culture may feel that the students were not only wrong but that a mistake on such a simple problem indicates that the students are "dumb." But it is the test, and the teacher, that do not know the correct answer to the test question. In Bristol Bay the most common use of tires is to hang them over the side of a fishing boat for use as "fenders" or cushions to keep the boats from being scarred by contact with docks, scows, and other boats. Even the youngest children are intelligent enough to know this and are mystified by the ignorance of the test's "correct" answer.

Another way in which teachers reinforce feelings of inadequacy and inferiority was revealed in the dropout research from the University of Alaska. Teachers expressed the idea that "the only hope" for the native student was for him to go to boarding school and thus be removed from the influence of home and community.[11] The implication of this idea is that home and community must therefore be a bad influence and that the sooner the old village ways are gone the better for young people.

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[11] *Ibid.*, p. 326.

> Results of such beliefs when stated implicitly--and in some cases explicitly--led to feelings in the community that there was something "wrong" with being native. Subsequent attitudes of defensiveness and inferiority established barriers between the teacher and the child which will not easily be overcome.[12]

This is perhaps the saddest school failure of all. Indeed, some critics of Indian school policies have said that the

> ...most damaging of all...is not the educational failure, but the psychological impact of years of nationwide effort--in which the schools played a key part--to convince the Indian, however subtly, of the irrelevance of his culture....and to press him, however unwillingly and unsuccessfully, into the American urban-industrial-middleclass mold.[13]

The insidious and subtle goal of Indian education is reflected in this statement from a Bureau of Indian Affairs publication.

> If Indians are to become mature in the white man's culture, it is essential that schools expose Indian children to experiences, situations and ideas that are basic to our cultural assumptions.
>
> A more rapid means by which to accomplish the same goal would be to marry off all the Indians to non-Indians, so that the children of the mixed marriages would actually live with aspects of non-Indian culture. As we will continue to have full-bloods with us for many generations, the school must serve as the culture

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[12] *Ibid.*, p. 327.

[13] William Byler, "The Disaster of Indian Schools," in *Education News*, (New York: Vol. 2, No. 7, April 8, 1968), p. 14

spreading medium.[14]

This apparently benign concern implies the ultimate destruction of Indian ways and people. It raises many questions. Why shouldn't we plan to have full-bloods forever instead of for many generations? Why should the school be a "culture spreading medium" in only one direction, from white to Indian? Why not let the school be a true culture spreading medium with a mutual sharing of cultural identities? As Byler points out, "the impact of what has been called 'acculturation by alienation' has been disastrous."[15] The extent of that impact, according to Byler, can be measured by the statistics of Indian alcoholism, unemployment, divorce, child abandonment, suicides, assaults, delinquency and emotional disturbance. The Indian student confronting this kind of basically destructive attitude in the school must "choose between contradictory sets of values and attitudes."[16]

> "He is placed, in Dr. Saslow's words, in the 'ambivalent situation of having to make a choice between the middle-class values of the school system and the traditional values of his family and tribal heritage; and whatever his choice, facing negative consequences and/or alienation from the discarded source.'

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[14] Willard W. Beatty, Education for Cultural Change, (Chilocco, Oklahoma: Chilocco Indian Agricultural School, 1953), p. 238.

[15] Byler, *op. cit.*, p. 14.

[16] *Ibid.*, p. 15.

> "Many simply make no choice at all and make what amounts to a psychological retreat, thereby acquiring the characteristics so many teachers and principals complain marks so many Indian students: passivity, inaction, apathy, low achievement."[17]

The dilemma confronted by a native caught between two cultures may be faced in a variety of ways. Oliver LaFarge, a prominent student of Indian culture in America, writes:

> When primitive peoples are overwhelmed by a totally alien, higher culture, they have three choices. One is nativism--to reject the higher culture altogether and a special effort to preserve all old ways in purity. In our modern age this seldom if ever works. The millions of men of the Machine Age press too remorselessly; also they offer too much that is useful and attractive....
>
> The second choice is complete acceptance of the higher culture, entirely abandoning the old one. This, also, seldom works. There are exceptions, but as a rule the native who has cut himself off from all of his own tradition is an incomplete and uneasy man. There is too much learned in infancy, the warmth of certain types of family relationships, the satisfaction of certain ways, a mode of thinking of one's self, a set of values, that nothing can satisfactorily replace. Given a proud tradition, a sense of the goodness of belonging to a certain race and having the history a certain tribe has, a profound desire to continue to be members of that tribe and keep it in being--which we find almost everywhere among our Indians--and you begin to understand how some tribes remain still Indian after two hundred years or more of contact with the white man, and after having been moved hundreds of miles from their original homes.
>
> The third choice, and the most hopeful one, is making a new adaptation, taking what is good of the higher culture, keeping what is good, and can, as a practical matter, survive the older. In great degree this is what most Indians are trying to do. They have a hard time of

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[17] Dr. Harry Saslow, in testimony before Kennedy Senate Subcommittee on Indian Education, cited by Byler, Ibid., p. 15.

> it, not only because the white men habitually push them around, but even more because most white men hold the curious conviction that no people can become progressive unless it becomes exactly like themselves.[18]

Robert L. Bennett, director of the Bureau of Indian Affairs in Washington, D. C., points out that regardless of the imperative toward change inherent in our times, resistance to change is nevertheless strong. The ties to the village and the old ways are difficult to break, but both the young and the old realize that they must be broken.

> This gives young people and parents alike much concern about the future. One result is that failure expectance among youth is very high. Children get a limited outlook from their parents.[19]

Native children, like children the world over, expect and want their parents' advice. But in Alaska the native parents are frequently spectators and not participants in white culture. Consequently the advice is apt to be poor, and their judgments superficial. Positions of leadership in white society are reserved for whites. The native is reluctant to push himself or his culture upon the white man. Thus he often fails to make the valuable contribution that he might. Bennett challenged a native group in this way:

You should not allow your culture and traditions to

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[18] Oliver LaFarge, A Pictorial History of the American Indian (New York: Crown Publishers, Inc., 1956), p. 221.

[19] Anchorage Daily News, op. cit., p. 20.

> become an object of charity by others to keep alive. Rather you owe to society the responsibility of contributing the good things of your culture or way of life to the general society for the good of all.[20]

This general Alaskan cultural problem works hardships that are reflected in statistics. "Of the 5,368 native students who were of secondary school age in 1960, 1,832 or only 34.10 per cent were actually enrolled in high school."[21] Drop out rates as high as sixty per cent of total enrollment were found in Bureau of Indian Affairs schools in grades one through eight. "While transfers from Bureau of Indian Affairs schools might account for a fractional portion of the loss, the major cause is simply early dropout."[22] Surveys have disclosed that of the students who manage to stay in school through the high school years, half will not complete their freshman year of college and less than two per cent are likely to continue until they receive a Bachelor's Degree.[23] The University of Alaska study also showed that,

> Of 19,447 non-white adults twenty-five years of age and older residing in Alaska in 1960, 7,503 had received fewer than five years of formal schooling. 3,415 non-white adults had no formal schooling; and the median

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[20] Ibid., p. 21.

[21] Ray, Ryan, Parker, op. cit., p. 41.

[22] Ibid., p. 42.

[23] Anchorage Daily News, op. cit., p. 24.

> number of years of schooling completed by these Alaskan citizens is a disturbing six and six-tenths years.[24]

In the Bristol Bay area particularly, economics also may work against the educator. What education offers does not seem as rewarding as the mythical remuneration afforded by the red salmon runs. Young men of high school age may occasionally catch enough fish to make their income higher than their teachers'. When a teacher labors for $8,000 for 9 months and his student may earn $10,000 or more in one summer month, education seems neither desirable nor necessary. In a private conversation one school superintendent put this fact into words: "You will never educate these kids until you dry up the bay!" But the reality of the fishery as an economic resource is that the average income earned through fishing is much less than the teachers' except for once every five years when the runs are large. A more apt description of the fisheries as an economic resource expressed by one resident is that "fishing is like playing Russian roulette with a revolver only one cylinder of which is empty." Economic factors inhibit normal school progress not only through their negative effect on motivation of students, but because the fishing and hunting endeavors are considered (sometimes justifiably in this economy), as sufficient reason to miss school.

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[24] Ray, Ryan, Parker, op. cit., pp. 3-4.

The evidence for the greater remunerative rewards for education is reflected in statistics compiled for an area study by the Alaska State Housing Authority. King Salmon, of three villages in the region that were compared, has the highest grade-level of completed education, and also the highest income. Heads of households in King Salmon averaged 12.7 years of education. Income averaged $11,150.00. In Naknek, 18 miles away, the head of a household averages 9.5 years of education and earns an average of $6,520. In South Naknek, just across the river, the education completed by the average head of a household is 6.5. The average income is $3,210. The per capita incomes in the same villages reveals an even more radical drop in income. King Salmon's average per capita income is $3,266; Naknek's average per capita is $1,388; but South Naknek with an educational average approximately one-third that of King Salmon shows an average per capita income of $683 or about one-fifth the amount earned in King Salmon.[25] The above statistics reflect averages compiled for both natives and non-natives. Only Naknek and South Naknek report native heads of households, but in both villages native families reflect educational levels little more than one-half that of non-natives. Naknek shows 11.7 years of education for whites, but only 7.5 for natives, while South Naknek shows a level of 10.3 years for whites, and only 5.5 for native heads of households.[26] Yet prestige in the community has no connection with education. Prestige is awarded to fishing skill. The man who is respected is the "high-liner", the man who catches the most salmon during the summer run. Young people, however, need to be helped to understand that education has value in and of itself, and that over a period of years it is also more remunerative.

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[25] Bristol Bay Borough Comprehensive Development Plan, (Juneau, Alaska: Alaska State Housing Authority, 1966), pp. 51 and 88.

The immediate problem facing a teacher who is new to Bristol Bay and confronted with a class in which the students are mostly native is communication. The teacher, because of his training and years on a college campus, is apt to have a blase' attitude toward culture. To talk knowingly about art, science, world events, is normal. But this is a world about which the student has only the most limited knowledge. Words may not trigger the same reaction in a student that they do in a teacher. Thus, when "Peter Pan" is mentioned, the teacher's mind begins to associate with James Barrie, a little boy who never grew up, the English theatre, and whatever else may come to his mind from that point. But the student's mind immediately begins to think of a cannery. "Peter Pan" is the name of an old cannery, well-known throughout the bay. Thus his mind moves in the direction of fish, boats, nets, and the sea, while the teacher is thinking of something involved with the other side of the earth and totally foreign to his student. The breakdown in communications in this situation is complete.

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[26] Ibid., p. 88.

Since the teacher is the stranger in town, and in the minority group in the village, much of the burden and effort required to develop understanding rightly falls on him. His training and background should make the task easier for him.

> Since teachers are in the position of authority and control and possess key professional training, it would seem reasonable to hope that school personnel would become familiar with community traditions in the hope of achieving better understanding of the people among whom they work.[27]

Many teachers don't accomplish this understanding simply because material is not available in a usable package. In addition, "new teachers are often too isolated or too busy with adjustments to a new location to be able to locate informative source materials."[28]

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[27] Ray, Ryan, Parker, op. cit., p. 323.

[28] Arnold Granville, "Objectives For a Teaching Resource Unit on Alaska," a paper presented to the Eighth Alaskan Science Conference, Anchorage, Alaska, 1957, from Science in Alaska 1957, pp. 154-155.

This paper seeks to provide such material for the Bristol Bay area, and it is hoped that it may serve as a model upon which other regions within Alaska may build resources. The paper also deals with a particular change in the social studies curriculum which may be of both interest and benefit to native students and their teachers.

It is believed that two major steps could be taken to deal with the problems described thus far:

1. Develop a social studies curriculum for the elementary grades that would be geared to teaching the native youngster about his own culture. This would include units on language, cultural characteristics, customs, history and folk-lore. It would require the writing of special textbooks and reading materials, drawing up a list of suggested activities for individual students and the class as a whole, listing resources available and developing a course outline to be used as a study guide.

2. Develop a social studies unit that could be incorporated into an Alaska history course, or, better, be taught as an elective semester course at the secondary level. This would help meet the need of the older students in a remedial, short-range approach.

The purpose of these programs would be to involve the native student in his own "nativity" in such a way that he would come to know and appreciate his own cultural heritage. This would make him better able to adapt wisely to other cultures. The instilling of pride in his heritage would serve to undergird and support the student psychologically and combat the expectancy of failure. The heritage of the Alaska native is one of highly successful adaptation to a difficult and hostile environment. The student needs to become aware of the prowess and adaptability of his people. It is hoped that this will help change the self-image held by many of the students of the Bristol Bay area. That it is important for persons to hold an estimable self-image is a fact attested by educational psychologists.

> From birth to death the defense of the phenomenal self is the most pressing, most crucial, if not the only task of existence. Moreover, since human beings are conscious of the future, their needs extend into the future as well, and they strive to preserve not only the self as it exists but to build it up and to strengthen it against the future of which they are aware.[29]

This may account for the fact that many students who are disinterested in normal academic subjects in Bristol Bay are intensely interested in discovering more about their own cultural backgrounds and heritage.

This paper will be primarily directed toward the second proposal, the development of a unit at the secondary level, of a course in native history and culture to be taught in Bristol Bay Borough Schools. It will include material about the history, geography, anthropology, and archaeology of the area. The concluding chapters will contain a suggested course outline and some lesson plans, with a list of resource persons who might be used in the development of a high school class titled "Cultural Backgrounds of Bristol Bay."

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[29] Donald Snygg and Arthur W. Combs, Individual Behavior (New York: Harper & Brothers Publishers, 1949), p. 58.

The material presented can also be used by the teacher in order to increase his own understanding of the area and enable him to avoid some of the pitfalls normally immanent in his cultural differences. The writer's purpose is not to write a textbook for such a class, though this material may suffice as one. Rather the material included here is intended to be resource information for the teacher who is new to the area, and for the local students who may not have had access to this material before. It is hoped that both the teacher and the students will be interested in developing this class, and that together they will undertake the task of preparing materials and greatly expanding the work done in this paper.

It is not pretended that the above program is the answer to the myriad problems, both recognized and as yet undiscovered, in educating our Alaskan native people. It is believed that such a program is one workable answer that could be implemented in the social studies program without a major revision of the entire educational system. Experience would indicate that the latter is necessary, but it would also indicate that teachers caught up in the urgency of the daily classroom situation want some concrete means which can be used practically, immediately, in a given school program to meet a particular problem. The writer feels that the approach outlined in this paper will provide a practical tool to help teachers understand their community and their students, and to change the students' self-image.

Justification for such a program is reinforced by the findings of the studies undertaken by the University of Alaska research program, and by the experience of schools in Greenland where this approach has been in effect for many years. One conclusion reached by Charles K. Ray, of the University of Alaska, is,

> ...the immediate instructional program must be planned to account for the enormous differences in the backgrounds, values, and orientation of the native students in the diverse regions of the Territory. An intelligent understanding by the teachers of the problems faced by those "caught between two worlds" is essential....Specially prepared instructional materials designed for native students are needed.[30]

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[30] Charles K. Ray, A Program of Education For Alaskan Natives, revised edition (College, Alaska: University of Alaska, 1959), p. 269.

It is believed that this paper will at least partially meet that need for Bristol Bay students, and overcome the criticism implied in the observation of a 1967 Presidential Task Force,

> ...that most Indian students are taught by non-Indian teachers....who work for non-Indian principals in schools where the books, curriculum and educational goals are "basically designed for life in non-Indian, middle-class society."[31]

Greenland's experiences in education of Eskimo people are instructive and more research should be undertaken to determine ways in which their programs have succeeded or failed.

> For more than 200 years the Danes followed a policy which fostered the continuation of traditional Eskimo culture in Greenland in all major respects....The language of instruction and of the textbooks was Eskimo. The content of the curriculum had local relevance....[32]

Though there have been numerous additions and changes through the years, the program remains geared toward maintenance of the cultural values and self-esteem of the Eskimo participants. The results of this process have been evaluated by Brant and Hobart:

We have been concerned in our study with the socio-

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[31] Byler, *op*. *cit*., p. 15.

[32] C. W. Brant and C. W. Hobart, "Sociocultural Conditions and Consequences of Native Education in the Arctic: A Cross-National Comparison" (Unpublished, mimeographed report of the University of Alberta, 1966), p. 1.

> psychological impact of Eskimo education. Among Greenlandic Eskimos, there appears to us to be a high degree of maintenance of feelings of group self-esteem and a positive valuation of most aspects of traditional culture. Danes and things Danish are not accepted wholesale, mechanically, slavishly; ways of doing, attitudes and motivational patterns are not, in a blanket manner, regarded as good by Eskimos because of their association with the Danish way of life. In every place visited, especially in the less acculturated districts, we found evidences of considerable independence of outlook and of overt resistance when Danish teachers or other officials were regarded as tactless or overbearing in their behavior. One interesting symbol of the emerging synthesis is the general insistence by many on the usage "Greenlander" rather than the disjunctive labels "Eskimo" and "Dane."[33]

Conferences on "Cross-Cultural Education in the North" under the sponsorship of the Arctic Institute of North America, and under the direction of Professor Frank Darnell of the College of Behavioral Sciences and Education, University of Alaska, seem a promising enterprise. It is intended that representatives of the Soviet Union, all the Scandinavian countries, the United States and Canada, will all take part in discussions to examine the educational process as it applies to the native peoples of the North in their transition into present-day living. Compared to the shambles, frustration and bitterness left by our educational attempts this appears to offer a "consummation devoutly to be wished."

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[33] _Ibid._, p. 3.

CHAPTER TWO

LOCATION AND PHYSICAL ENVIRONMENT OF NAKNEK DRAINAGE

One of the areas in which teacher and students can share mutual understandings lies in the physical environment. The local residents have lived in and with this land for many years. They are acquainted with it in intimate ways and their knowledge can never be duplicated by a teacher from other areas. The teacher, on the other hand, may know much from the white culture's studies of such areas. The knowledge born of long association and the knowledge from the scientific books and journals may be wed in the creative classroom situation, so the instructor and students may both learn much. This chapter contains information which the teacher may use to increase his own knowledge of the area and which may be shared with his students.

It is believed that the kind of easy sharing envisioned by the writer will stimulate student interest in a scientific and scholarly approach to environment, and also make local knowledge available to the teacher. For instance, students can tell the teacher about Johnson Hill; about its fame as a landmark for fishermen; about the occasional bears that move into the area in the summer; the bands of caribou that roam its slopes in winter; the wolves and small game that can be found; and about the cranberries, blueberries and lichens that grow there. But students may be astonished to discover that Johnson Hill is composed of rock pushed by a glacier thousands of years ago from the mountains miles away across the Alaska Peninsula. The geological evidence for this can be cited, and it will agree with the students' knowledge of the area. Such pooling of resource information can be exciting for all who take part. Information which can be used in such a fashion by the teacher follows.

The Naknek River drainage begins in the mountains of the Aleutian Range at the base of the Alaska Peninsula. The river itself flows out of Naknek Lake and drains into Kvichak Bay, on the north side of the peninsula. The region drained by the Naknek system covers an area extending approximately from 59° North to 60° North and from 154° West to 157° West. The melting snows and streams of this area drain into Naknek Lake and a number of other lakes formed by the gouging of glaciers that worked in the area during prehistoric times. Because of its position on the Alaska Peninsula the area contains several geographical features that make it unique and interesting. Mountains, lakes, coastline, tides, tundra, and permafrost are all features of the local geography.

Mountains. Along the Alaskan Peninsula the Aleutian

Range runs close to the Pacific Ocean and its walls are short and steep on the Pacific side. However, the back slope of the mountains is more gentle, with a gradual decrease in elevation which turns the landscape near Becharof Lake into tundra-covered low ridges and foothills approximately 300 feet in elevation. There is a pass through these mountains from old Katmai village on the Pacific side to old Savonoski on the Savonoski River which drains into a pumice delta and finally into the Iliuk Arm of Naknek Lake. At the east edge of Lake Iliamna there is another low pass through the mountains which is still used as a portage as it was in pre-historic times. This pass permits the passage of boats and people from Bristol Bay to Cook Inlet and the territory to the east. A third pass, much used during pre-historic times, was located at the eastern edge of Becharof Lake.

The first exploration of the mountains by a scientist was by Josiah E. Spurr, who passed through on a reconnaissance in 1898. He was a trained geologist, and his report of the mountains in the area of Katmai Pass is indicative of the terrain in the mountainous part of this area.

> The trail leads along the hillside above the bed of the small stream which runs into the lake at Savanosky, and frequently boiling brooks, tributaries to this stream, must be forded. The mountains on both sides of the small valley grow higher and as one approaches the summit of the range it is seen to be composed of a continuous chain of volcanoes, none of which, however, is at present active, although natives informed us that one

> of them occasionally smokes. From the sides of some of these highest volcanoes splendid glaciers wind down into the valley, and in other places great walls of morain, damming mountain gorges, mark the former positions of glaciers which have somewhat retreated....The Katmai Pass lies between two volcanoes and is extremely wild and rugged, being the most difficult mountain pass we crossed during the journey. For several miles on both sides of the summit there is no trace of vegetation, the surface being composed of huge angular fragments of rock, piled together without even a covering of moss. Through this debris and the underlying lava, the mountain streams have cut deep gorges.[1]

The descent on the Pacific side is very steep, falling about 3,000 feet in the distance of about ten miles.[2]

Lakes. The Naknek River drainage rises in the mountains where snow melt and glacial waters flow into the lakes whose outlets eventually drain into the Naknek River. These include Kukalek, Battle, Kuliak, Nonvianuk, Coville, Grosvenor, Brooks, Hammersly, Idavain, Iliuk Arm of Naknek Lake, and Naknek Lake itself. Naknek Lake, approximately twenty miles long, was formerly called Lake Walker.[3] The lower elevations in the area, composed chiefly of tundra, are dotted with small ponds and lakes. The largest lake in Alaska, Iliamna, drains into the Kvichak River which empties into

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[1] Josiah E. Spurr, "A Reconnaissance in Southwestern Alaska in 1898," United States Geological Survey Twentieth Annual Report, Part 7, pp. 43-263.

[2] *Ibid.*, p. 91.

[3] Henry W. Elliott, *Our Arctic Provinces* (New York: Charles Scribner's Sons, 1887), p. 400.

Bristol Bay a few miles from the mouth of Naknek River. The second largest lake in Alaska is in the southern portion of this area and is called Becharof.[4]

At present the lakes have but little economic value. However, they are filled with marketable fish as was demonstrated a few years ago by winter fishing under the ice in Naknek Lake. Trout, Dolly Varden, ling cod, whitefish and greyling were all taken in large quantity. Currently they are the source of some fine sport fishing, and as such they do draw a moderate number of tourists. They also provide convenient landing places for float planes and, after freeze-up, for planes equipped with skiis. Such landings usually take place on hunting trips for moose or caribou conducted by local bush pilots and guides.

Coastlines and Tides. As one moves up the northern edge of the Alaska Peninsula from the Aleutians toward Naknek he moves from the Bering Sea into Bristol Bay and thence into Kvichak Bay. The coastline in the area of Kvichak Bay near the mouth of the Naknek River is characterized by a low sea cliff measuring 25 to 75 feet in height. In the vicinity of the River mouth itself the cliffs reach their maximum height of 75 to 100 feet. These cliffs have been developed by the work of waves which pound the bottoms of the cliffs at high tide, eroding their bases and causing their upper slopes to slough off. North of the river mouth toward the Libbyville cannery is an area of low sand bars and islands. These bars shut in shallow lakes and lagoons. Sand dunes are found in places along the coast here. South of the Naknek River mouth and down the peninsula are sand and gravel beaches, sand reefs, and off-shore bars which characterize this portion of the coast. Low tides often expose the large areas of sand reefs and bars. The waves, undertow, and shoreline currents are engaged in shifting the base material from place to place.

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[4] Mariette Shaw Pilgrim, Alaska: Its History, Resources, Geography, and Government (Caldwell, Idaho: Caxton Printers, Ltd., 1954), p. 210.

The sea-bordering lands of the coast are low lands, and the waters for many miles out are shallow. The waves strike the bottom of the bay long before they reach the coast, and instead of doing much erosional work, they are chiefly active in depositing materials to build and change the beach. This also causes extreme choppiness during stormy weather. As the regular swells are broken by contact with the bottom, the waters of Bristol Bay become very rough and hazardous to the fishing fleet.

Tides in this area are considered high in comparison to other tides on coasts around the world.[5] The Naknek River is a tidal estuary for much of its length. At the mouth it is 3/4 of a mile across, and except for a narrow channel of some 18 feet depth at mean low water it is only about 10 feet deep and shallower in many areas. At the point where the river empties into the bay the mean tidal range is 18.5 feet, the daily range of the tide is 22.6 feet, and the extreme range is 28 feet. About 18.5 miles up the river at King Salmon, the mean tidal range is 2.1 feet, the daily range is 3.2 feet, and the extreme range is estimated to be 9 feet. The tide's effect is felt approximately 6 miles upstream from King Salmon.[6]

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[5] Defant, Albert, Ebb and Flow. The Tides of Earth, Air, and Water (Ann Arbor: The University of Michigan Press, 1958), p. 96.

Aerial photographs clearly show that there is a deep, narrow and well-defined old channel of Naknek River within the wide tidal estuary of today. The old channel has been obscured at its mouth by shore current deposits and materials worked from the base of the cliffs over the river. The tide moves into and out of the river with considerable force and its ebb and flow is forming fresh cut banks along the river, and locally shallowing the submerged channel. River navigation is dependent on following precisely the deep channel and avoiding the shallows that border it. Even at high tide this is precarious work, and at low tide boats with a draft of three feet cannot reach Bristol Bay from the river or vice versa, because of the extensive shoals at the river's mouth.[7]

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[6] Unpublished report on Bristol Bay Borough (Juneau, Alaska: Alaska State Housing Authority, 1964), p. 32. (Mimeographed.)

An additional hazard to navigation along this part of the coast is the large number of more or less submerged high boulders which make obstructions throughout the length of Naknek River from above King Salmon to Bristol Bay. These have been left behind by a receding glacier and are pushed about by river ice in the winter and during spring break-up so that their positions are shifted.

There are no rocky outcrops on the Naknek River, the shores being always stratified clays and sands, undisturbed and horizontal and containing many boulders which reach large size. These boulders are generally very coarse and are a form of granite.[8]

Permafrost. The Bristol Bay area lies in a zone classified as "discontinuous permafrost." In this zone the thickness of permafrost, which may exceed 1,000 feet in areas of continuous permafrost, decreases, and nonfrozen areas are more and more abundant. Permafrost is,

> ...a thickness of soil or other surficial deposit or even of bedrock, at a variable depth beneath the surface

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[7] Sherman Raymond Abrahamson, "Geography of the Naknek Region, Alaska" (Unpublished PhD Thesis, Clark University, Worcester, Massachusetts, 1948), p. 4.

[8] *Ibid.*

> of the earth in which a temperature below freezing has existed continuously for a long time (from two to tens of thousands of years).[9]

Most permafrost is consolidated by ice; permafrost that occurs in ground with saline or brackish soil moisture may be colder than 0 degrees C for several years but would contain no ice and would not be firmly cemented. This kind of terrain, however, would still classify as permafrost and is termed "dry permafrost."[10] Permafrost is defined on the basis of temperature alone, so any material which has been below freezing continuously for more than two years may be called permafrost, even though it may simply be a refuse heap.

> Permafrost forms when more heat leaves the ground than enters and a temperature below 0 degrees C is produced continuously for several years. This heat balance is delicate and the 'cold reserve' grows or is lessened as the heat flow is modified by climatic changes or by changes in the region between permafrost and atmosphere; that is, changes in the vegetation, snow, and characteristics of the upper layer of thawed ground.[11]

Thus permafrost, as in much of the Naknek area, may be a hold-over from colder climates that gripped the country in earlier times. It is the "product of an extinct climate."[12]

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[9] Troy L. Pewe, Permafrost and its Effect on Life in the North (Corvallis: Oregon State University Press, 1966), p. 5.

[10] *Ibid.*, p. 5.

[11] *Ibid.*, p. 6.

[12] *Ibid.*

From Egegik southward the area is considered a "no permafrost" zone.

Tundra. One of the common adjectives applied to tundra areas is "barren." What this generally seems to mean is that there are no trees. Aside from the fact that few trees, or sparse, stunted ones grow in the tundra, the vegetation found there is usually lush. Elliott remarks that the river banks are covered "with a luxuriant growth of bushes, grasses and amphibious plants, semi-tropical in their verdant vigor of life."[13] The type of vegetation found in the tundra varies according to soil conditions. For the most part the trees in Naknek drainage are located along the slopes of the hills and mountains in the King Salmon and Katmai National Monument areas, and they are surrounded by tundra.

Soils in the Naknek region are very strongly acid, and fall into two general classes: 1. Sterile quartz-sands that have been rather completely washed of plant nutrients; 2. Raw humus or peat which has a capacity for retaining great quantities of absorbed water for a long time.[14]

There are eight plant communities recognized at Naknek; these have been categorized by Abrahamson as follows:

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[13] Elliott, op. cit., p. 400.

[14] Abrahamson, op. cit., p. 10.

1. The lichen heath, which includes the local variety of cranberry.

2. Spruce-lichen heath which grows on sand dunes and lower parts of the moraines where the soil is less dry and rocky with a porous subsoil, and on the parts of the outwash plain that are well-drained. The most dense stand of spruce is at King Salmon, along King Salmon Creek and on the border of a dune area which includes the air station. Here the soils are well-drained, warmest, and least acid. Most of the spruces in the region are short-lived because they are shallow-rooted and easily overturned by the strong winds that frequently move through the area. The largest and oldest tree in this area is about 36 feet high, its diameter 22 inches and its age 100 years.

3. Sphagnum heath is found where soil conditions favor the growth of sphagnum or bog moss, particularly on poorly drained areas of the outwash plain. The water-saturated soil overlies permafrost, but does not necessarily show open water. The dampness of the overlying air also favors the growth of bog moss. This kind of vegetation is a traveller, and once established it tends to take over whole territories. This would indicate that one day the spruce will probably be replaced by the bog. However, the tree line in Alaska generally seems to be ad-

vancing.[15] This vegetation is the most familiar to residents of the area who find it extremely difficult to walk in. It forms a very thick spongy carpet which rolls under foot and in which one may sink up to knees or even deeper.

4. Near the shore of almost all the small lakes and ponds, more or less submerged plants live and die. The decaying forms of these plants form a kind of humus which builds up the lake bottom. With the continual building up of the lake bottom more and more marsh is created, the pond shrinks in size, and the result is a cotton grass-sedge marsh. The dominant plant in this community is a small species of willow; the most common herb is cotton grass, which was at one time used by natives for wicks in oil lamps. The soft "cotton" was twisted to make the wick.

5. The mixed thicket communities develop best along the banks of the Naknek River, its tributaries, and on the ice-pressure ridges around the numerous lakes and ponds where the sandy soils and well-drained shrubs of various types flourish. Generally they grow best on the south-facing slopes. Locally balsam poplar is abundant, particularly near the Rapids Camp location. Other common members of this community include the Kenai birch which is one of

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[15] Max E. Britton, Vegetation of the Arctic Tundra (Corvallis: Oregon State University Press, 1966), p. 4.

the two most common shrubs and grows individually and in clumps about 2 to 3 feet above the ground. It has a squat form and a strong root system which makes it wind resistant. As a result it may attain great age. A specimen 7 feet tall with a diameter 4.65 inches was found to be 125 years old. Alder is another dominant shrub. It usually is found in dense clumps 8 to 12 feet high. The oldest plants are in the center of the clump and the younger ones are toward the margins.

6. Estuarine plants are those which normally are found along the beaches near salt water. They are also found in this area along the banks of the Naknek River and its tributaries and as far upstream as the Naknek Moraine. This marks the level of the rise of tides. A kind of reed grass forms an almost uninterrupted fringe at the edge of the river. The only shrub in this community is a type which grows in sporadic clumps of various sizes all along the river. At high tide the clumps may be partly submerged; at low tide they can be found several feet above the water level.

7. Riparian plants are those "water-growers" which are distinguished from the cotton grass-sedge marsh. This type of plant community is recognized along the edges of the Naknek River and its tributaries above the tidal limit.

8. Lacustrine plant communities occur along the

borders of lakes and generally grow right in the water. This type of plant community is the fore-runner of the cotton grass-sedge marsh.[16]

Everywhere in the Naknek region water and vegetation are struggling for supremacy. At present vegetation is slowly but surely emerging the victor. Many former ponds are now only drying swamps. Gentle creek bottom slopes have gradually filled with vegetation that reduces the water carrying ability of the streams. A good example of this type of action can be seen at Old Leader Creek and along the upper reaches of both Paul's Creek and King Salmon Creek.

For an area that is frequently referred to as "barren" the variety of plant life is astonishing. The number of families of flowering plants in a collection made in Katmai National Monument is 39, in addition to three families of ferns and fern allies. One hundred two genera and one hundred fifty-four species of plants are known in the region. These include fifteen species of grass, twelve species of rose, and seven species of heath. The fern, eveningrose and figwort families each have five species represented.[17]

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[16] Abrahamson, op. cit., 73-94.

[17] Victor H. Cahalane, A Biological Survey of Katmai National Monument, Vol. 138, No. 5, Smithsonian Miscellaneous Collections (Washington: Government Printing Office, 1959), pp. 21-63.

A partial list of these plants by families and species with their Latin names will be found in Appendix A.

Glaciation. Glacial activity has had a pronounced affect upon the terrain and continues to influence the appearance of the area at present. Many of the streams in the region contain the milky, opaque drainage characteristic of glacial run-off. The Savonoski River and the rivers of the Katmai National Monument area are examples. The Naknek Lake system is itself the result of glaciation that occurred during the Wisconsin era. Four major periods of glaciation have been distinguished. The first was designated the "Halfmoon Bay Glaciation" and is believed to have extended from the highlands of the Aleutian Range across present Kvichak Bay. The second advance was termed the "Johnston Hill Glaciation" and extended from the highlands to the present shore of the Bay. A third advance, the "Mak Hill" period terminated about half way between the present towns of Naknek and King Salmon. The present lake system and drainage pattern was carved by the fourth glacial period called the "Brooks Lake" glaciation. The western end of the Iliuk Arm of Naknek Lake consists of a terminal moraine formed during a period of lesser readvance of ice called the Iliuk glaciation.[18]

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[18] Don Edward Dumond, Human Prehistory in the Naknek Drainage, Alaska, (Ann Arbor: University Microfilms, 1967), pp. 6-8.

From the evidence compiled by Muller and Karlstrom, Dumond concludes that the Brooks River was in existence and functioning to connect Brooks and Naknek Lakes by 6000 or 7000 B.C. Further, according to Dumond, "it has been in its present condition at least since the beginning of the Altithermal, approximately 4000 B.C."[19] Although the Naknek River in its present form may not have been in existence until about 8,000 or 10,000 B.C., the lower Naknek River has been free of ice since before Wisconsin times.[20]

The extent of the effect of glaciation upon the region can be seen in the report of the Johnson Hill area made by Abrahamson in 1948.

> Ten miles southwest of the mouth of Naknek River and 2 miles east from the shore of Bristol Bay is a lone hill known as Johnson Hill. Its reported elevation is 356.2 feet.
>
> The hill has the exterior appearance of a great morainal deposit, but its sides and crown seem to have suffered the smoothing effect of extensive solifuction action. Despite this surficial modification, which may be due to great age, the positive clue to the composition of Johnson Hill is the conspicuous sprinkling of large erratic boulders on its slopes. Observed from the air, bouldery-till deposits are also seen to form the bluffs and sea cliffs for miles along the shore of nearby Bristol Bay, including the coast immediately west of Johnson Hill; erratics project from the bluffs and lie on the beaches along their base.[21]

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[19] Ibid., p. 9.

[20] Ibid.

[21] Abrahamson, op. cit., p. 23.

However, Johnson Hill and the coast are not the only areas that reflect this glacial activity. "The tundra vegetation is underlain by typical ground moraine like that exposed along the river."[22] The origins of this material may be traced back to the Aleutian Range. The material itself has traveled a long distance.

> In addition to the granite erratics, which are assumed to originate in the Aleutian Range, further evidence that these materials have come a long distance was furnished by the finding of shale erratics containing molds of the Upper Jurassic clam, Aucella, common to rocks of the Naknek Formation, which outcrops in the vicinity of Naknek Lake. The location of these erratics, and a till sheet of vast areal extent can only mean that glaciers of the ice sheet type extended much farther west over the Naknek region than previously has been supposed.[23]

Volcanism. Volcanic activity in the Naknek area is of importance not only to an understanding of the region's geography, but also because it serves as a tool in the processing of archaeological finds. Volcanoes are found in such numbers that they must be considered an important aspect of the geology of the Alaska Peninsula which is actually part of a long semi-circular chain of volcanoes that extends around the Pacific rim. In the Aleutian Range alone at least 47 volcanoes have erupted or issued steam since 1760. Nearly 80 volcanoes have been discovered in the 1600 mile span of the Aleutian Range.[24]

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[22] Ibid., p. 24.

[23] Ibid.

Geologists distinguish between volcanic craters, which are "eruptive vents," and calderas, which are formed by the collapse of the summits of the large volcanic cones. Katmai volcano is such a caldera, as are Veniaminof, Purple, and Frosty, all on the Alaska Peninsula.[25] In this century, Martin, Iliamna, Chiginagak, Magik, Trident, Spurr, Redoubt, Katmai, Augustine, Douglas, Novarupta, Veniaminof, and Pavlof have all shown some volcanic activity.[26]

The most devastating eruption involved Katmai and Novarupta, which was some seven cubic miles of ash and pumice ejected from Novarupta. The peak of Katmai collapsed, indicating that the underground system of the two neighboring peaks was connected by lava conduits. Eskimo villages at the head of Naknek Lake and on Shelikof Strait were abandoned without loss of life.[27]

At present eight layers of volcanic ash can be recognized in the Bristol Bay region with some consistency, and are helpful in the correlation of archaeological materials, a process which will be discussed in Chapter IV.

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[24] Howard A. Powers, "Alaska Peninsula-Aleutian Islands," Landscapes of Alaska: Their Geologic Evolution, Howell Williams, (ed.), (Berkeley: University of California Press, 1958), p. 61.

[25] Ibid., p. 68.

[26] Ibid., pp. 64, 65.

[27] Ibid., p. 67.

Climate. Because of its location at the head of Kvichak Bay, the Naknek drainage has a climate that is maritine in character, without wide fluctuation in temperature, and relatively steady but slight precipitation. The climate tends to be intermediate between the constant storminess and moderate temperatures of the Aleutians to the Southwest, and the lesser precipitation and more extreme temperatures of interior Alaska. However, the area occasionally experiences definite continental climatic influences, and these make the briefly endured extremes which are experienced in summer and winter. Thus King Salmon has a recorded summer high of 88°, but the mean maximum temperature experienced over a 20 year period during the warmest month, June, is only 60.3°.[28]

Tables I and II indicate other mean temperatures during the twenty year period extending from 1928-1948. Two hundred days each year are below 32° minimum temperature and only nine days have a maximum over 70°.[29]

Cloud coverage in the area is generally high. Only

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[28] Abrahamson, op. cit., p. 58.

[29] Ibid., p. 59.

82 days each year are clear.[30] Fog occurs frequently, especially when the wind moves in from the southwest, carrying a high moisture content, which condenses in low level cloudiness. Fog development occurs most frequently during July and August, but can occur every month of the year. During the winter this phenomenon causes substantial accumulations of frost on outside objects. Sixty-four days are partly cloudy.[31] Tables III and IV show the averages for cloudy and clear days over a twenty year period.

In spite of the cloudy skies, the annual precipitation is relatively meager. Over one hundred days each year record some precipitation, but the low temperatures and low absolute humidity have resulted in a twenty year average rainfall of 23.23 inches. Average snowfall for the period was 38.7 inches.[32] Considerable amounts of snowfall come as squalls move inland from the sea. These are frequently of short duration, but occasionally they move in close succession and then snow may accumulate to sizable amounts. December, which averages about 10 inches, has more snow than other months.[33]

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[30] Alaska State Housing Authority, op. cit., p. 36.

[31] Abrahamson, op. cit., p. 54.

[32] Ibid., p. 65.

[33] U. S. Weather Bureau, King Salmon, Alaska, 1964.

TABLE I

MEAN MAXIMUM TEMPERATURE[a]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average
22.2	26.7	28.4	41.7	53.7	60.3	58.4	56.9	55.0	42.8	28.1	21.1	41.3

[a] Abrahamson, *op. cit.*, p. 54.

TABLE II

MEAN MINIMUM TEMPERATURE[b]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average
8.9	12.6	11.6	25.6	34.0	42.3	47.2	47.3	40.9	29.2	15.5	8.1	26.9

[b] *Ibid.*

TABLE III

AVERAGE NUMBER OF CLEAR DAYS[c]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average
9	8	10	7	5	6	4	3	6	7	8	9	82

[c] *Ibid.*

TABLE IV

AVERAGE NUMBER OF CLOUDY DAYS[d]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average
18	16	17	17	20	16	21	22	18	18	18	18	219

[d] *Ibid.*

TABLE V

MAXIMUM WIND SPEEDS (20 YEAR AVERAGE)[e]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average
80	63	60	62	55	51	43	51	50	56	62	74	(59)*

[e] *Ibid.*

*inserted by author

Another important climatic feature of the Naknek area is wind. Strongest winds generally occur from December through March. However, the summer months of June and July may also experience severe wind storms of 80 knots or more. Twenty year averages are shown in Table V. In the winter, prevailing winds are generally from the northeast; in summer, the prevailing wind is from the southwest.[34]

Fauna. A wide variety of mammals, birds, and fishes have been catalogued by Cahalane during a study of Katmai National Monument. Twenty-one species of mammals are listed as commonly found in the area. The largest of these include moose, brown bear, caribou, reindeer, beluga whales, wolves, foxes, sea otters, land otters, seals and occasionally walrus. Spurr remarks on the profusion of game animals in the report of his trip through the Naknek drainage and over Katmai Pass. "On the northwestern shore of Bristol Bay our natives killed two caribou, and we saw moose just before crossing Katmai Pass."[35] The size of the bears impressed him. "Bear are also abundant in the mountains around Katmai and grow to enormous size, being in part the brown grizzly bear or Kadiak grizzly...."[36]

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[34] Ibid., p. 53.

[35] Spurr, op. cit., p. 92.

Bird life is abundant in the area, and Cahalane listed nearly 100 species. In season there are numerous species of swans, ducks, gulls, owls, loons, grebes, thrushes, sparrows, warblers, jays, ravens, spruce grouse and willow ptarmigan.[37]

Fish have historically supplied a great portion of the diet of subsistence type cultures in the area, and are an important resource today. Five species of salmon can be found, as well as rainbow trout, arctic char, Dolly Varden, northern pike, whitefish, stickleback, and Pacific lamprey.

A more complete list of identified mammals, birds and fish can be found in Appendix A. Its use may stimulate students to try to identify as many varieties as possible and should provide a guide for similar class activities.

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[36] Ibid., p. 51.

[37] Cahalane, op. cit., pp. 21-63.

CHAPTER III

HISTORY

It is believed by the writer that a sense of history is important for anyone who is trying to discover who he is as a person. Without any understanding of the past, of who he has been, one lacks reality in his orientation to the present. If one has an understanding of his origins he can also have some appreciation for the present. History shows him how much he owes to the past sacrifices of others. True history demands that one see both the nobility and the degradation possible in mankind. The former enhances one's self-image by making him aware that he shares such nobility and that great deeds are possible for him. The latter enhances one's self-image, for rarely does one find himself as mean-spirited, craven, or degraded as his historic villains. This enhancement of one's image helps him to see himself as a valuable person, a representative of a proud tradition, and responsible to himself and to the future.

It is believed that a sense of history is important for the native people of Alaska, and for the residents of Bristol Bay. Their tradition encompasses a generations-long movement of people into an extremely hostile environment and shows these people adapting wisely to that environment, and thus surviving with style. For the most part the people of

Bristol Bay are no longer moving into a strange and hostile environment, but a strange and apparently hostile environment is moving in upon them. It is still necessary to adapt wisely or face extinction. The environment that accompanies the white culture of western civilization can be just as threatening as the arctic winter.

Many books have been written about the Eskimos of the Arctic; many have been written about the Indians of the Northwest Coast whose colorful totem poles attract interest and attention. But seldom have books been written expressly about the people of Bristol Bay. This is to be regretted since they are ~~a~~ unique and important people. As Hulley points out,

> These southern Eskimo peoples, living away from the true Arctic environment and coming in close contact with the Aleuts on the west, interior Indians on the north, and coastal Indians on the east, modified their ways of life and true Eskimo characteristics, and became something of an intermediate type between Eskimo-Aleuts and Indians. These Pacific seaboard Eskimos cannot be considered in most ways typical of Eskimos.[1]

Eskimo Origins. History was being made in Alaska and in Bristol Bay long before the coming of white men. Unfortunately, much of that history was handed down through an oral tradition now largely lost. However, in order to trace the history of Bristol Bay at all, one should begin with the first settling of the North American continent by the unknown aboriginal ancestors of the local residents. The whole problem of Eskimo origins is difficult and complex in spite of much work by anthropologists. However, it seems clearly established now that the Aleut and Eskimo peoples were originally one group and that the Aleuts split away from the other peoples and moved down the Alaska Peninsula and out onto the Aleutian chain.[2] Nevertheless, the origins of the first people to develop the unique culture of the Northland is still a topic of discussion among anthropologists.

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[1] Clarence C. Hulley, Alaska: Past and Present, (Portland: Binford and Mort, Publishers, 1958), p. 17.

In his work, The Ancient Culture of the Bering Sea and the Eskimo Problem, S. I. Rudenko includes a historical survey of the various positions taken by anthropologists about the coming of man to the North American continent. Rudenko traces theories of origin from Asia, from interior Alaska, from Hudson Bay, and from central Canada. The theory which he evidently most approves evolves from the work of Henry B. Collins, Jr., who began excavations in 1928 on Punuk Island and St. Lawrence Island. The cultural sequences he uncovered indicated that Eskimo culture in the older stages was often found to be more sophisticated and highly developed than more recent stages. Therefore, according to Rudenko,

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[2] Ibid.

> Collins believes that we must probe more deeply into the past to find the simple beginnings of this ancient culture, and that there is no doubt as to the direction in which these beginnings are to be sought. We must look toward northern Eurasia, where Collins sees its area of first appearance as eastern Siberia, somewhere between the mouths of the Anadyr and Kolyma Rivers.[3]

Though Rudenko seems to approve Collins theory of eastern Siberian origins, his conclusion has a major modification of Collins' idea.

> The sea mammal hunting Eskimo appeared relatively late in the Bering Sea area,...They came, it would seem, into the Bering Sea region not from the north, but from the south, not from the Arctic part of Asia, but from its insular southeastern portion. It was in the early times that this culture spread from the Bering Sea region westward along the Arctic coast to the mouth of the Kolyma and eastward to Point Barrow. The subsequent movement of this culture eastward as far as Greenland occurred only at the end of the first and the beginning of the second millenia.[4]

Oswalt does not take sides on the question of origins, but simply concludes, "it is necessary to consider both sides of the north Pacific Ocean."[5]

The method by which primitive men came to North America is also a question. Travel on drift ice is extremely dangerous and therefore unlikely. It is possible to negotiate the Bering Strait in a skin boat with landmarks visible en route. But if men came over 20,000 years ago, chances are that boats were not so well engineered and refined as those used by Eskimos in more recent times.

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[3] S. I. Rudenko, *The Ancient Culture of the Bering Sea and the Eskimo Problem*, (Toronto: University of Toronto Press, 1960), pp. 7-11.

[4] *Ibid*., p. 179.

[5] Oswalt, Wendell H., *Alaskan Eskimos* (San Francisco: Chandler Publishing Company, 1967), p. 60.

Driver says, "It seems more probable that the first infiltrators to reach Alaska walked all the way on a land bridge."[6] The evidence for existence of a land bridge seems conclusive. Geologists estimate that during the maximum period of major glaciation ice may have accumulated to depths of 9,000 feet in some locations and that the ice cap was 5,000 feet high over large areas of land.[7] Enormous amounts of water were thus tied up in the ice cap. Because of the excessive cold temperatures in glaciated regions, runoff of water from melting ice was less than the deposit of snow in winter. The result was a lowering of the ocean level by as much as several hundred feet. Land bridges, perhaps 100 miles wide, may thus have existed for thousands of years at a time in this area.

However, the whole of North America was never completely covered with ice at one time.

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[6] Harold E. Driver, Indians of North America (Chicago: The University of Chicago Press, 1961), p. 5.

[7] Ibid.

> The ice cap of the last major glaciation, the Wisconsin, seems to have centered in the region of what is now Hudson Bay. Alaska and western Canada had less ice, and there were ice-free corridors of hundreds of miles in extent in these western areas.[8]

Archaeologists tend to divide Paleo-Indian cultures into three major historic traditions, following the arrival of men in North America. The first tradition comprises an eastern hunting culture supported by abundant finds of hunting equipment in camp sites. A second is made up of a western tradition which relied more on plant foods, and whose artifacts include choppers, scrapers, grinding stones and fewer spear points. The third tradition, which includes Bristol Bay, is found in Alaska and Canada and it is placed later in time and is affiliated with the Eskimo who lived along the Arctic coast.[9]

Bristol Bay. The people who finally settled in the Naknek River area of Bristol Bay were Aglemiut Eskimo. However, close identification of these people is made difficult by several factors:

1. Eskimos are a people who normally live in small groups, rather than tribes. They do not have a formal tribal organization.

2. Russian observers who were on the scene early

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[8] Ibid.

[9] Ibid., p. 7.

tended to designate everyone from the tip of the Aleutians to Kodiak, and the Alaska Peninsula, as Aleuts.

3. In more recent times the population distributions have become more scattered and people have been more mobile. Contemporary residents of the area sometimes refer to themselves as Aleuts but at other times as Eskimo. Even within the same families confusion exists. However, Swanton, Petroff, and the Eleventh census all agree that the Aglemiut inhabited this area. Their territory included most of the Alaska Peninsula from Port Moller to the western shores of Lake Iliamna. Dall says,

> This tribe inhabits the north coast of Alaska from the 159th degree of west longitude to the head of Bristol Bay, and along the north shore of that bay to Point Etolin....They are the Aglemiute of Holmberg.[10]

The area covers approximately 25,000 square miles and at the beginning of the historic period had an estimated population of about 1900.[11]

According to Oswalt the Aglemiut moved into the Alaska Peninsula in early historic times. Evidence he cites to support this idea includes the following material:

1. Originally the Aglemiut were inhabitants of Nuni-

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[10] William H. Dall, Alaska and Its Resources, (Boston: Lee and Shepard, 1870), p. 405.

[11] James W. VanStone, Eskimos of the Nushagak River, (Seattle: University of Washington Press, 1967), p. xxi.

vak Island but were displaced by the Kuskowagmiut and others. They were pushed to the Nushagak and lived there under protection of the Russians after the Russians moved in to build Alexandrov Redoubt.

2. Another report places the Aglemiut originally in the Kuskokwin area, later at the Nushagak River mouth.

3. Under Russian sponsorship the Aglemiut came to control most of the Alaska Peninsula, and probably assimilated the peninsula people as they pushed southward.[12]

Dumond places the Eskimo-Aleut boundary line near Port Heiden and lists Ugashik as an Aleut enclave.[13] At the time of the census of 1890 there were two communities in the area. One was on the north side of the Naknek River mouth. It is called Paugwik or Pavik. The other village, Savonoski, is also listed as Ikkhag, Ikak, or Ighiák.[14] The current residents refer to this site as "old Savonoski."

Naknek is first mentioned in historical documents in 1821 by a Russian explorer, Captain Lieutenant M. N. Vasiliev. According to the Dictionary of Alaska Place Names, the Russians built a fort called "Fort Suvarov" at or near the village.[15]

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[12] Oswalt, op. cit., pp. 4, 5.

[13] Dumond, op. cit., p. 22.

[14] Robert P. Porter, The Eleventh Census (Washington: Census Office, 1893), 169.

Aboriginal Contacts. The people of old Savonoski evidently had contact with the Pavik group and also with people on the Pacific side of the Alaska peninsula at Katmai Village. In 1912 when the village was destroyed by a volcanic explosion, the inhabitants moved down the river, closer to Pavik and established New Savonoski.[16] Contact with Pavik through Iliuk Arm, Naknek Lake, and down the Naknek River, was a simple matter to people skilled in the use of the bidarki. Personal experience indicates only one place, just south of Naknek Lake, where there are some rapids. The weather can create problems on the lakes, however, and storms may arise suddenly, bringing a vicious chop to the water that may capsize or break up small boats. Traffic over the mountains through Katmai Pass to Katmai Village is documented by Josiah Spurr, who made a geological reconnaissance through the area in 1898.

> This pass lies between two extinct volcanoes and is high, snowy, and rocky, and has no definite trail. The wind is often so cold and violent here, even in summer, that the natives do not dare to cross except in calm weather, for the gusts are so powerful that stones of

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[15] Orth, Donald J., Dictionary of Alaska Place Names, Geological Survey Professional Paper 567, (Washington: U.S. Government Printing Office, 1967), p. 671.

[16] Porter, op. cit., p. 25.

considerable size are carried along by them.[17]

In spite of the difficulty of the journey, however, Petroff indicates that the people along "Lake Walker," an early name for Naknek Lake, "maintain a more constant communication with the Kaniagmute of Katmai across the mountains than they do with their kinsmen on the coast of Bering Sea."[18]

Residents of the area speak of three main paths across the Alaska Peninsula that were used both in primitive times and within memory. One is a portage from the head of Iliamna Lake to Cook Inlet, a route still in use. "This was a frequently used trade route of the Eskimos and Indians," according to Townsend.[19] A second was over Katmai Pass, and the third was from Becharof Lake over the mountains to the Pacific side across Shelikov Strait from Kodiak.

> The Russian promyshleniks first made their way to Bristol Bay and Nushagak across the peninsula from Kodiak, and found abundant evidence to show that this route of communication had been an inter-tribal highway for ages past.[20]

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[17] Spurr, op. cit., p. 59.

[18] Ivan Petroff, Report on Population, Industries, and Resources of Alaska, (Washington: U.S. Census Office, 1834) p. 136.

[19] Joan B. and Sam-Joe Townsend, "Archaeological Investigations at Pedro Bay, Alaska," (College, Alaska: Anthropological Papers of the University of Alaska, Volume 10, Number 1, December, 1961), p. 29.

[20] Robert E. Griggs, The Valley of Ten Thousand Smokes, (Washington, D.C.: The National Geographic Society, 1922), p. 266.

Contact with the Pacific side was maintained "to partake of opportunities for sea mammal hunting superior to those offered by Bristol Bay."[21] Petroff says they came "to do their shopping and to dispose of their furs."[22] Dumond's conclusion is that by the end of the nineteenth century the people of Savonoski

> were in the position of middlemen between the Koniag of Shelikoff Strait and the coastal Aglemiute. Whether or not this inland settlement represented the remains of a long tradition of inland year-round settlement in the area, is at present uncertain.[23]

Contact between villages and groups was not always so peaceful as the trips to Katmai Village for trade would seem to indicate. Griggs points out, as does Dumond, that Ugashik was an Aleut enclave, and adds they "in former years made warlike expeditions along this coast, extending as far to the northward as the Naknek River and Lake Walker (Naknek Lake).[24] He also relates that residents of a small village near Naknek Lake could still recall in 1922, a

> night attack made by the 'bloodthirsty' Aleuts long years ago when every soul in the place was dispatched without mercy, with the exception of one lone man, who hid himself under a waterfall (Brooks Falls, close by the

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[21] Dumond, op. cit., p. 26.

[22] Petroff, op. cit., p. 25.

[23] Dumond, op. cit., p. 29.

[24] Griggs, op. cit., p. 265.

village) and thus survived to tell the tale.[25]

Dumond records a story which remained unverified due to lack of time for further interviews, which indicates that in the old days "the Savonoski and Pavik peoples fought each other with bows and arrows."[26] This does not seem unreasonable in the light of personal interviews made in 1964-1966. Residents speak of a time when Indians from the villages along the North side of Iliamna Lake descended the Kvichak and engaged in a bitter battle with Pavik inhabitants over women and booty. The dead were buried by pushing them under the ice on a small pond near Pavik. There is some possibility that the two stories are really only one incident, with people from "up the river" interchanged, though there may have been many such incidents.

Spurr used Eskimo boatmen from the Nushagak to carry him from the mouth of the Nushagak River to Kvichak River and thence to the Naknek River, and on to Savonoski. "At Savonoski our Nushagak natives went back, being in continual fear of being frozen in by the increasing cold weather."[27] This would confirm at least some contact between Kiatagmiute or

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[25] Ibid.

[26] Dumond, op. cit., p. 27.

[27] Spurr, op. cit., p. 59.

Nushagagmiute people along the Nushagak River and the Aglemiute. Osgood's study of the Tanaina revealed that there was extensive trade among the people of Iliamna Lake, Cook Inlet, and Bristol Bay.[28] Bancroft makes a similar report.[29] Townsends found Aglemiute ground slate tools and weapons, indicating trade, among Indian artifacts in archaeological sites around Lake Iliamna.[30]

Early Russian Contacts. Detachments of promyshleniki wintering at Karluk on Kodiak Island, were sent out to explore the coastal area of the Alaska Peninsula. Some crossed the peninsula and moved as far north as Iliamna Lake. This was in 1785.[31]

Chevigny reports the sending of two skin boats into Bristol Bay by Baranov in 1791. Under command of Botcharov, the two boats were to "turn at the tip of Alaska Peninsula and go north on the Bering Sea side to explore."[32] Botcharov made the journey successfully, portaging across the peninsula from Becharof Lake to Shelikov Strait and thence to Kodiak where he rejoined Baranov. However, Botcharov said,

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[28] Cornelius Osgood, The Ethnography of the Tanaina, (New Haven: Yale University Publications in Anthropology, Number 16, 1937), p. 75.

[29] Hubert Howe Bancroft, History of Alaska 1730-1885, (San Francisco: A. L. Bancroft and Co., 1886), Vol. 33, p. 144.

[30] Townsend, op. cit., p. 30.

[31] Hulley, op. cit., p. 73.

[32] Hector Chevigny, Lord of Alaska, (Portland: Binfords and Mort, Publishers, 1965) p. 46.

> their survey had revealed nothing of value....Bristol Bay was a huge expanse of shoreline with many Eskimo villages, peaceable enough and friendly, but few sea otter were there and only a poor showing of bear, marten, fox, and other furs of inferior value.[33]

Father Juvenal, a Russian priest under the Archimandrite Ioasaph, moved through Bristol Bay into the Lake Iliamna area where he tried to convert the natives. There he also tried to interfere in the polygynous practice of the people and suffered what Hulley calls "self-invited martyrdom."[34] Townsend feels that there is reason to doubt this reason for his murder, but does not give any further explanation.[35]

The Russians took furs in enormous quantities from every area, and the decline of furs in Southeastern soon led to other explorations of coasts of the Bering Sea.

> In 1818 Korasakovsky was placed in charge of an expedition to make a thorough exploration of the territory north of Bristol Bay, and to establish a permanent station on the Nushagak River that flows north from Bristol Bay. Korasakovsky crossed from Cook Inlet to Iliamna Lake, thence to Bristol Bay, and then north to the mouth

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[33] *Ibid.*, p. 53.

[34] Hulley, *op. cit.*, p. 165.

[35] Townsend, *op. cit.*, p. 30.

of Nushagak River. There he left Kolmakof with several men to build a new permanent post, Alexandrovsk, and to explore the interior.[36]

A Russian explorer, Staniukovich, sailed up the coast in the sloop Moller in August and September 1827. He named Cape Suwarof, the point just north of the mouth of Naknek River, probably after the Russian fort nearby.[37]

In 1829 another Russian, Vasilief, ascended the Nushagak and portaged to the Kuskokwim River which he followed to its mouth.[38] By 1830 the entire area was well known to the Russians, and a fort had been established by that time near Naknek.[39]

Perhaps the strongest Russian influence which still shows vestigial traces was promulgated by Father Ivan Veniaminov. Although he was never actually in Bristol Bay, Father Veniaminov was assigned to the Aleutians and Kodiak for ten years and brought a whole new spirit into the nature of the Russian Orthodox Church. His missionary zeal was supplemented by an equal measure of interest in his people. He made studies of their culture, developed a written form for their language, organized schools, and developed a loyalty to the Russian Orthodox tradition which is at least nominally given by many residents today.[40]

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[36] Ibid., p. 154.

[37] Orth, op. cit., p. 935.

[38] Ibid.

[39] Orth, op. cit., p. 671.

English Contacts. On July 2, 1778, Captain James Cook stood out to sea in command of two ships, the Resolution and the Discovery. He cautiously explored Bristol Bay on a quest for a water passage across the North American continent.[41] He had probed the inlet between Kenai Peninsula and the Alaska Peninsula, and it now bears his name. The upper reaches of the inlet become a shallow arm in which Cook was forced to give up his quest again. He marked his charts, "Turnagain," and the name still holds.[42]

Sailing down the Pacific side of the Peninsula, Cook passed south of Kodiak Island and believed it to be part of the peninsula coast; Kodiak is not marked on his charts. Moving out toward the Aleutian chain, he passed between Umnak and Unalaska, found a natural harbor at Unalaska and put in for water. The inhabitants seemed used to Europeans and Cook believed he was in an area which had been previously explored by Russians. On leaving Unalaska, Cook sailed into

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[40] Hulley, op. cit., pp. 166, 167.

[41] Ibid., p. 89.

[42] Ibid., p. 88.

Bristol Bay. From there to Cape Newenham the coast was carefully explored but shoal waters seriously hampered the operation.

Cook named Bristol Bay in honor of the Earl of Bristol.[43] On his way home from this trip, the only known English incursion until recent times, Cook was killed in the Hawaiian Islands.

Other Contacts. In 1884 two Moravians on their way to the Kuskokwim Valley as missionaries came through Bristol Bay. The Reverend Henry Hartman of New Field, Canada, and William Weinland, a student, were sent to explore this area on behalf of the Moravian mission board of their church in Bethlehem, Pennsylvania. Dr. Sheldon Jackson, a Presbyterian missionary famed among Alaskans, had told the church leaders in 1883 that the Eskimos along the Kuskokwim were in pitiful shape. Coming from Cook Inlet across the portage to Iliamna, the pair made a difficult journey to Nushagak and there found a Russian priest who claimed that area as far as Togiak. The men moved on with Eskimo guides to the Kuskokwim and established the mission which still operates in the valley.[44]

In 1898 Katmai village suffered a boom when gold was discovered at Nome. Katmai Pass, the ancient trail to Savonoski, became a short cut to the gold fields. According to Griggs, the "sudden influx of travel must have utterly bewildered the poor natives, who were unable to provide accommodation for the travelers."[45] The villagers at Katmai built a kind of bunk house a short distance from their community to house travelers.

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[43] Pilgrim, op. cit., p. 31.

[44] Hulley, op. cit., p. 237.

Griggs also makes note of one "Charlie Carter," who was a postman. Carter carried the mail by dog sled from Nome to Katmai one winter. However, as fantastic a feat as this seems to modern minds, Griggs showed a geologic interest in things other than the wonder of the Carter expedition:

> He has told me that on the upper part of Naknek Lake the ice was very treacherous, sometimes thawing out when the air temperature had not risen above 15 degrees F., which clearly indicated to him the presence of hot springs somewhere in the vicinity.[46]

History and Significance of the Salmon Resource. Salmon has always been an important food resource from aboriginal times to the present. With the coming of the white man and commercial development of the resource, salmon has been of extreme import to Alaska's economy. "Salmon and Alaska have been as closely intertwined as cotton and the South," Senator

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[45] Griggs, op. cit., p. 267.

[46] Ibid.

Ernest Gruening states.[47]

Aboriginal Salmon Use. Two attitudes towards the salmon were important to native people before white exploitation of the salmon resource, according to Cooley. These two attitudes were markedly different from the ideas of the white men.

First, native people apparently considered the fish of a particular stream or coastal area to be the privately held resource of a particular group.

> ...private ownership of the salmon resource through control of fishing rights was a highly developed social institution which served to reduce competition among tribes and tended to limit and stabilize catches from any particular stream.[48]

Streams or sites along the coast were recognized as "belonging to" the group which used them year after year. In some circumstances, however, other tribes or clans could "borrow" or "rent" fishing sites, "if they were in need or faced a winter without sufficient food."[49]

The second attitude evolved from a mythological viewpoint which resulted in a workable conservation principle.

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[47] Ernest Gruening, The State of Alaska, (New York: Random House, 1954) p. 245.

[48] Richard A. Cooley, Politics and Conservation, (New York: Harper and Row, Publishers, 1963), p. 20.

[49] Ibid.

> Salmon played an important part in mythology and ceremonial activities, and many of these peoples developed beliefs that were combined with ritual practices which assured the return of a portion of the salmon to the spawning grounds each year.[50]

Salmon were seen as a mysterious people who lived under the sea and voluntarily gave themselves as a sacrifice each year and then returned to the sea. Such generosity was to be honored and revered. Rituals were developed to insure its continuance. Consequently, says Cooley,

> whether or not there was a consciousness of the biological requirements of the species, such mythological beliefs and rituals provided an elemental ecological conception of the relationship of all living things which served to check man's misuse of the resource.[51]

Drucker traces the origins of such a belief to the logic of the salmon run itself, "when one considers the spectacular phenomenon of the annual salmon runs, such a belief seems reasonable enough, especially to primitive people."[52] Both of these historical native attitudes were ignored by the white men and the fishery has suffered for it. Oswalt describes the Bristol Bay salmon runs as "almost unbelievable in magnitude,"[53] and holds that though other foods were sought to supplement the diet, Eskimos were heavily dependent on the salmon for food.

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[50] Ibid., p. 21.

[51] Ibid., p. 22.

[52] Philip Drucker, Indians of the Northwest Coast, (Garden City, New York: The Natural History Press, 1963) p. 154.

[53] Oswalt, op. cit., p. 105.

Commercial Fisheries. The first white incursions were for fur, but fur was only a temporary resource and the fur harvest soon declined.

> Up to the late 1870's salmon fishing in Alaska was conducted as a local industry to provide food for the inhabitants of the small Alaska communities. But it was soon to expand into an exporting business.[54]

Sitka and Klawack were the first sites for commercial canneries in Alaska. Established in 1878-79 the shipment of salmon that first year was small, amounting to 14,854 cases.[55] By 1889 the annual pack had risen to 696,732 and 37 canneries had been established from Ketchikan, through Yakutat, Cook Inlet, Kodiak, and into Bristol Bay.[56]

In 1884 the Arctic Packing Company established a cannery in Bristol Bay on the Nushagak. In 1890 it built another at Naknek. Soon afterward other canneries were opened in the area, and only eight years later the number of Alaskan canneries had grown to 55.[57]

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[54] Hulley, *op. cit.*, p. 217.

[55] Gruening, *op. cit.*, p. 74.

[56] *Ibid.*

[57] Hulley, *op. cit.*, p. 218.

The main centers for these canning operations were at locations outside Alaska. San Francisco and Seattle were two main storage and marketing centers, controlling the industry and siphoning the profits from the Alaskan resource to the other states. For all practical purposes, this aspect of the industry has remained unchanged.[58]

In the early years competition between canneries was acute. Competition was based upon a double desire: (1) maximum packs for the cannery, and (2) elimination of rival canneries. So grave was the seriousness of this competition that one report stated, "their rivalry is carried to such extremes that bloodshed at any moment will not surprise those who know the real conditions existing there."[59]

The market for salmon was irregular and sporadic. The market was oversupplied by the many new canneries and prices were lowered. The result was a high mortality rate among new canners, who frequently suffered bankruptcy and were forced to abandon their plants.

The need for merging the struggling marginal concerns into larger combines was soon apparent. In 1893 the Alaska Packers Association was formed by dominant San Francisco interests. Only one year later the association "owned or controlled 90 percent of all canneries in Alaska with a pack equaling nearly 72 percent of the total output."[60] Though Alaska Packers could not maintain a complete monopoly, it still remains a powerful force in Alaska. It was the first in a developing pattern of large corporations which control the industry. A great number of small canneries continue to come and go but their operations are usually so small as to be marginal.

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[58] Cooley, op. cit., p. 26.

[59] Ibid., p. 27.

A study of the cannery movement in Western Alaska from 1884 until 1938 revealed that in this area of Alaska alone

> 51 canneries were built; 36 were burned, abandoned or moved to other sites; and from time to time numerous operations have been consolidated. Fifteen plants operated in Western Alaska in 1950.[61]

In 1893 the Louis Sloss Company of San Francisco, operating at Thin Point, joined forces with Alaska Packers and moved during 1894 to the Naknek River as part of the Arctic Packing Company. Diamond NN is now located on the saltery station of this Arctic Packing Company.

Naknek Packing Company also began in 1894 by purchasing a saltery station from L. A. Peterson. Their cannery was located about three miles from the mouth of Naknek River, and in 1928 this company was merged with the Red Salmon Canning Company.[62]

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[60] Ibid., p. 28.

[61] Annual Report No. 2, 1950, of the Alaska Department of Fisheries, Juneau, Alaska, p. 57.

In 1895 the Alaska Packers Association operation was stopped at Thin Point, Alaska, and the equipment made available by that closure was moved to Koggiung. This year also saw the Point Roberts Packing Company erecting a cannery at Koggiung as a member of Alaska Packers. One cannery building at the Coffee Creek operation burned in 1895.[63]

Koggiung continued to be the area of great activity in the early 1900's even though tidal mud flats and shallow water frequently hampered operations. The North Alaska Salmon Company built two canneries there, only 1,000 feet apart. By 1905 one had failed, and in 1916 Libby, McNeil and Libby took over both plants. In 1936 they were closed because a mud flat had formed in front of them. The sites were abandoned.

Diamond X or Coffee Creek Cannery was constructed at Bear Slough on the Kvichak River in 1900 and operated by Alaska Packers until 1941.

Diamond O Cannery was built in 1901, closed in 1929.

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[62] *Ibid*.

[63] *Ibid*.

Located at the mouth of the Naknek River on the south side, it was another in the garland of Alaska Packers Association properties in this area.

Hallersville, above Koggiung, was developed by North Alaska Salmon Company in 1904 but once again advancing mud prevented tenders and scows from docking. In 1916 the site was sold to Libby but did not operate.

In 1913 Libby, McNeil and Libby purchased another cannery, one begun under the aegis of Alaska Fisherman Packing Company in 1910. The plant burned out in 1915 but operated under the Libby name after being rebuilt in 1916. The year 1910 was also the date for the beginning of Bristol Bay Canning Company.

In 1916 Red Salmon Canning Company built a cannery two miles above Naknek Canning Company on the Naknek River. There was no building activity in 1917.

The year 1918 marked the beginning of another large cannery under the Northwestern Fisheries Company. All of the operations of this concern were leased to Pacific American Fisheries in 1933. This plant, known as Nornek Cannery, was purchased by PAF in 1935. It is currently known as Columbia River Packers Association. PAF also picked up above Diamond N in 1919.

Nakeen Cannery started in 1925 through Nakat Packing

Corporation which purchased the site from Peter M. Nelson. According to the 1950 report of the Department of Fisheries there were no new installations of shore plants after 1947. The report covered the period 1884-1950.[64] Sites still recognized by residents of the area can be found on the map in Appendix B.

Cooley also carefully documents another development in the Alaska fishery of which Bristol Bay residents and students are very much aware. Alaska's sparse population and lack of qualified fishermen, combined with the seasonal nature of the industry, made it uneconomical for fishermen to become Alaskan residents. Consequently canneries undertook the operation of the fisheries themselves.

> This developed into a standard practice in which each spring the canners recruited large numbers of fishermen in San Francisco, Seattle, and other West Coast cities, transported them to Alaska on company vessels, and paid them off at their home ports just as was done with cannery laborers. It was costly to provide transportation, boats, gear, supplies, housing, and other necessities to maintain this pattern. Only the larger companies were able to finance these annual expeditions and by so doing they gained a large degree of control over fishing grounds in Alaska, especially in the more remote areas such as Bristol Bay.[65]

It has been extremely difficult to break this pattern which works a severe hardship on resident fishermen. The companies have not been willing to surrender their control of both price and supply and the non-resident fishermen have not been willing to give up the economic foothold they have in the fishery.

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[64] Alaska Department of Fisheries, _op_. _cit_., pp. 58-62.

[65] Cooley, _op_. _cit_., p. 30.

> One of the best examples of the extent of this control occurred in the Bristol Bay area of Western Alaska, one of the more remote fishing areas in the territory and also the greatest red salmon fishery in the world. Fishing was under such tight control by a few large corporations and the non-resident union that until the 1930's only a few residents were able to fish in the area even though they were willing to become company employees. This control was partially broken in the middle 1930's and more residents were employed by the companies, but up until as late as 1951 private ownership of fishing boats either by residents or non-residents was practically nil in this most important of all fishing areas in Alaska.[66]

Van Stone also indicates this difficulty and points up the near impossibility of local native participation in the fishery. "As late as 1929," he notes, "there were only twenty-eight resident boats in all of Bristol Bay and these were owned by whites or mixed-bloods."[67] Canneries would not buy fish from the Eskimos who had set nets, according to Van Stone, because of a feeling they would be dirty or poorly handled.[68] And the picture did not change quickly. "In 1937 only 194 Eskimos were employed as cannery workers in southwestern Alaska out of a total of 4,328.[69] However, World War II and the depletion of fishermen available from outside Alaska for war industry and military duty, gave many more Eskimos an opportunity to work as fishermen or cannery men. The construction of increasing numbers of airfields which made bush flight transportation easier also created more work in the fishery for Eskimos.[70]

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[66] Ibid.

[67] Van Stone, op. cit., p. 78.

[68] Ibid.

The exploitive nature of the fishery is summed up in an economic survey of Dillingham and the Bristol Bay region conducted by the State of Alaska in 1955.

> Its outstanding characteristics are its highly seasonal nature (lasting only a few weeks in the early summer), its development and ownership by interests outside Alaska, the import of all its supplies and materials and the export of the entire finished product for ultimate distribution, and its utilization of non-residents to meet most of its labor needs.[71]

It might be added that boats owned by independents are arranged for, and frequently financed by the canneries for whom the fishermen work. They are paid for out of the season's catch and the owner is bound to work for his company until his boat is paid off. The "company store" concept of business continues strong in Bristol Bay.

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[69] Ibid., p. 79.

[70] Ibid., p. 80.

[71] George W. Rogers, Preliminary Economic Survey of Dillingham, Alaska and the Bristol Bay Region, (Rural Development Board, Juneau, Alaska: August 1, 1955), p. 7.

The movement of men, material and supplies was accomplished each spring by sailing vessel. Occasionally, because the trips had to be made early, the ships ran into difficulty with ice. Fourteen ships of several canneries were caught in pack ice off Nelson Lagoon in 1914. Two ships were crushed before the ice began to break up and leads were opened through the pack. According to John Lundgren, whose father was aboard one of the ships, the ice was so solid that the men could walk from one ship to another. The men came up early to prepare the canneries for opening and to make the cans. All cans were put together here. In early years the cans were made by hand. The cans had to be cut by hand, rolled, crimped and soldered. A good pack would include 40,000 cases, and cans had to be made and stacked for all those cases.[72]

John Lundgren's father was shipwrecked on the voyage out in 1907. The ship tacked too close to Nelson Lagoon and went aground. The men were saved by the fishermen aboard who used the boats that were being taken out for storage and repair. Two men set off across the peninsula to a Coast Guard station, while the men who were left behind lived off the salmon pack and caribou until rescued. It was 30 days before the Coast Guard was able to reach them.[73]

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[72] Tape recorded conversation with John Lundgren, May 26, 1966.

One devastating development since 1936 has been the rapidly increasing amount of gear introduced into Alaska's fishery at the same time production of canned salmon has been in decline. Peak production was reached in 1936 with more than eight million cases. Between 1936 and 1959, the years covered by Cooley's study, production decreased over 80 percent, reaching only 1.6 million cases in 1959. At the same time the number of gillnet boats increased from approximately 3,000 units in the late 1930's to 7,500 units in the late 1950's.

> Equally revealing is the trend in average catch per unit of gear from 1906 to 1959, with gillnets falling from about 15,000 to 1,500 fish per boat. Thus by the 1950's the average catch per unit of gear had decreased by about 90 percent for gillnets.[74]

The figures for Bristol Bay follow the same pattern as for Alaska generally. This will be shown below.

1917 saw 24,513,532 red salmon caught in Bristol Bay. Catches fluctuated radically until 1937 when 24,699,788 fish were caught. From that time until 1961 the largest catch was 18,622,516 reds. Only three other years saw over 12,000,000 reds netted. Between 1920 and 1937, 12 of the 17 years recorded seasons of over 12,000,000 fish with seven years of catches numbering greater than 19,000,000. Clearly the fishery has declined in numbers of red salmon caught since 1917.[75]

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[73] Ibid.

[74] Cooley, op. cit., pp. 49, 50.

During these same years the number of fishermen in the declining fishery has grown from a war-time low of 513 in 1942 to 3,488 in 1961. The average catch per man in 1937 was 8,839. In 1961 the average catch per man was 3,415.[76]

The historical importance of the Bristol Bay fishery to Alaska and the world is shown in other figures compiled by Middleton. In 1931 the percent of the total Alaska pack produced by Bristol Bay was 71 percent. In 1961 the percentage was 61. It has fluctuated in the intervening years, but the 31-year average Bristol Bay percent of the total Alaska red salmon pack is 59 percent.[77]

Over the eight year period from 1952 through 1960 Bristol Bay accounted for 33 percent of the total catch for the entire United States. During these same years Bristol Bay accounted for nearly 20 percent of the entire world catch of reds.[78]

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[75] Kenneth R. Middleton, Bristol Bay Biography, (Juneau: Alaska Department of Fish and Game, unpublished, mimeographed report of November 30, 1961), p. 4.

[76] *Ibid.*, p. 7.

[77] *Ibid.*, p. 17.

A development that has taken place since 1952 is the invasion of Alaska's red salmon fishery by Japan. In 1952 there were three motherships fishing for Alaskan salmon. They supplied 57 boats which caught 736,000 reds. In 1957 the number of motherships had risen to 16, supplying 461 catcher boats. 20,097,000 reds were taken. This was the peak year for the Japanese mothership industry through 1961.[79]

Appendix B shows the approximate location of the canneries referred to and the dates of their beginnings where known. Information for this comes from local residents.

Community Development. With the growth of the canning industry interest in the Naknek region grew. Originally the settlement at Pavik had provided an apparently stable community from which people moved to hunting or fishing grounds. Cannery construction, however, brought many new people into the area. "Momma" Monsen came to Bristol Bay from Akutan in 1912, arriving just two months after Katmai volcano exploded. When she first came to Naknek there were only three houses as we know them in the village. There were several canneries, but the village of Naknek was located between what is now Red Salmon Cannery store and the Nornek Cannery. (Nornek was not here at the time but was to be built several years later.) Some people lived in the village the year around in barabaries much like those of Aleuts Mrs. Monsen had known farther out on the Aleutian Chain. Others came just for the summer and lived in tents near the old town dump just east of Nornek.

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[78] *Ibid.*, p. 25.

[79] *Ibid.*, p. 23.

In the summer of 1919 an epidemic of flu hit the village and everyone in the village area died. Only four families (sisters and their children) who were down the coast hunting seals were spared. According to Mrs. Monsen, many natives from near Libbyville came down for the summer, and as soon as they arrived they got sick, too. The four sisters and their families who were down the coast were warned not to come back to the village because of the sickness. They were taken supplies in a cannery scow operated by Mr. Monsen.

Mrs. Monsen recalls that men would try to go out fishing but would come back, beach their boats and collapse on the beach. They could not walk, but would crawl until help came. Many were buried in the cemetery beside the Russian Church. People died so fast during the epidemic that trenches were dug for as many as eight people to be buried in a common grave. Mrs. Monsen remarked that she had never seen anything so terrible up to that time and has seen nothing so bad since.

People crawled through the grass near the Monsen house which had a fence around it. Mrs. Monsen was pregnant that summer, and had been warned by the cannery doctor not to have anything to do with the sick. But there was water at her house and the native homes had none. A native would come and knock on her fence gate and lie in the grass until she came to the door; when he requested water, Mrs. Monsen would tell him to put a bucket down by the fence and go back. Mrs. Monsen would get the bucket, fill it with water, and then put it back outside the fence, where it would be claimed by the sick. Occasionally she would carry it to their homes, because people were too sick to carry it themselves, but she was reprimanded by the doctor. Every native who came to the summer camp died there.

Old Savonoski had been evacuated because of the volcano, according to Mrs. Monsen; "there were not many mud huts there, but it was a permanent settlement, not just a summer one."[80]

Much of Naknek's growth in terms of permanent dwellings took place on property owned under the Homestead Act by the Russian Orthodox Church. The property was on a knoll and was well-drained. Residents moved into the area and built dwellings without filing special claims or patents on the land. Years later the Russian Church announced its ownership and sold lots underlying various homes to those who wanted them. This has left a certain residue of bitterness.

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[80] This information came from conversations with Mrs. Monsen, and from a tape recording made of a visit with her. July 9, 1966.

From World War I until 1930 Naknek mail service was irregular. The "Star," a 100 foot mail boat came three times a summer with both first class and parcel post service. In addition, mail arrived by dog team three or four times each winter. This was a highlight in the winter round of activities. Though hauled by what was considered an "enormous" team of 19 to 21 dogs, there was still too much weight to allow for parcels.[81]

In 1920, the first official school was built. Northwestern Fisheries Cannery brought the material up on their ship. It was packed up to the village by the fishermen, who also put the building together. Mrs. Monsen had started a school years before this, which she taught herself with material from the Department of Education. She had also entered persistent pleas for a regular teacher and a building.[82]

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[81] Lundgren, Ibid.

[82] Monsen, Ibid.

In 1929 the first airplane, an open-cockpit bi-plane, came to Naknek to fly out a lady who had appendicitis. Soon after, some of the famous bush pilots made more consistent flights into the area. Ray Peterson, Art Woodley, Dorr Brant, Roy Dickson and Jim Dodson all flew in the 1930's and 1940's.[83]

The permanent dwellings in South Naknek also seem to be the result of movement into the area to work for canneries. Only a few of those who live there have filed title for the land. There has been little formal development in South Naknek, though the recent adoption of a "Village Council" indicates that citizens are genuinely concerned about their community. This group, with an aroused citizenry, persuaded the Bristol Bay Borough Assembly to build a new school in South Naknek in 1964.

King Salmon's growth began with an isolated air navigation site in the 1930's. According to Mrs. Monsen, "there were only a few trappers' cabins in the area before World War II, and there had been a reindeer herd just up the river a short way from there."[84] In 1942 the area was leased by the Army and what is now King Salmon Air Force Station was built; originally it was called Naknek Air Force Base. At that time there was no road between King Salmon and Naknek.

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[83] Lundgren, Ibid.

[84] Monsen, Ibid.

In 1949 construction was begun on a road from Naknek Village to King Salmon. The Corps of Engineers were the original contractors, but now the State of Alaska maintains it. King Salmon's growth was aided when the Fish and Wildlife Service established headquarters in the area. The Weather Bureau, Federal Aviation Agency, Katmai National Monument Headquarters, and the Alaska Department of Fish and Game all have offices in the area at present.

CHAPTER IV

AGLEMIUTE-ALEUT CULTURE

The Scope of Anthropology. The subject matter of anthropology covers a vast territory. "It includes the study of man and all his works, in time and space."[1] Most anthropologists, however, must content themselves with some restrictions upon their study.

> Most were content, in time, to deal with the remains of peoples who had left no written records, and in space, to concern themselves with the peoples outside the pale of Western European and American society."[2]

Cultural anthropologists are students of culture. The concept of culture itself is hard to define in clear-cut terms. It has been described by a pioneer in the field, E. B. Tyler, as "that complex whole which includes knowledge, belief, art, law, morals, custom, and any other capabilities and habits acquired by man as a member of society."[3] The cultural anthropologist, according to Ruth Benedict,

> is interested in the great gamut of custom that is found in various cultures, and his object is to understand the way in which these cultures change and differ-

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[1] Carleton S. Coon, A Reader in General Anthropology, (New York: Holt, Rinehart and Winston, 1964), p. v.

[2] Ibid.

[3] Edward B. Taylor, Primitive Culture. Researches into the Development of Mythology, Philosophy, Religion, Language, Art, and Customs, (New York: Henry Holt & Co., 1877), Vol. 1, p. 1.

> entiate, the different forms through which they express themselves, and the manner in which the customs of any peoples function in the lives of the individuals who compose them.[4]

Victor Barnouw, an exponent of the study of culture and personality, defines culture as

> the way of life of a group of people, the configuration of all of the more or less stereotyped patterns of learned behavior which are handed down from one generation to the next through the means of language and imitation.[5]

Plummer defines culture as "an organization of phenomena--material objects, bodily acts, ideas and sentiments--which consist of or is dependent upon the use of symbols."[6] All of these definitions point toward the inclusive nature of anthropology and the study of culture. For the purposes of this program, anything that pertains to the native people of Bristol Bay may be an appropriate subject of interest or scrutiny. Linguistics, archaeology, ethnography, and ethnological theory are the areas generally ascribed to cultural anthropology.[7] This paper deals with these kinds of material, recognizing that the writer is not a trained anthropologist, but an educator looking for information that can be used in a classroom situation.

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[4] Ruth Benedict, Patterns of Culture, (Boston: Houghton Mifflin Company, 1934), p. 1.

[5] Victor Barnouw, Culture and Personality, (Homewood, Illinois: The Dorsey Press, Inc., 1963), p. 5.

[6] John F. Plummer, Anthropology, (New York: Monarch Press, Inc., 1965), p. 34.

[7] *Ibid.*, p. 6.

One other point ought to be made about the study of other cultures in general. Anthropologists strive to be non-judgmental in terms of standard moral judgments. They try to see cultures not as "better" or "worse" but simply as "different." This applies to the study of the native people of Bristol Bay as well. A statement sent by the Executive Board of the American Anthropological Association to the Commission on Human Rights of the United Nations reflects this ideal: "Respect for differences between cultures is validated by the scientific fact that no technique of qualitatively evaluating cultures has been discovered."[8]

Culture Diffusion and Bristol Bay. It is no wonder that people on the Aleutian Chain, Alaska Peninsula, and Kodiak Island were all called Aleuts by the Russians. They shared similar customs, wore similar dress, ate similar foods. Though the variations were great from one area to another, there were many cultural characteristics that were common throughout the region. The "Kamaleya," a rain parka made from the lining of sea mammal intestines, was found in all these areas, as were dependence on sea food, sea mammals, and birds. This fact is attested by Fredericka De Laguna.

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[8] Coon, op. cit., p. vi.

> Presumably the same general influences have been at work in shaping their (Chugach Eskimo) culture as have molded those of the other Pacific Eskimo and Aleut groups, and have produced similar sequences.[9]

She also supports the interest of Drucker, Dumond and Oswalt in the culture diffusion between these Eskimo people and their wide circle of contacts with other culture groups.

> An important and interesting task would be to discover and formulate the distinguishing characteristics of these several southwestern Alaskan cultures, their many interrelationships, and the common themes on which they are based. The area as a whole was heavily populated by prosperous people who had made successful adjustments to rather exacting environments, and whose wealth had enabled them to elaborate the artistic, social, and ceremonial aspects of their culture further than other Eskimo groups, except perhaps their neighbors in Bristol Bay. Their way of life seems to have been distinctive, as compared with that of other Eskimo; it was not simply a northern culture transplanted to the sub-Arctic, but had its own roots and history....Southwestern Alaska is one of the strategic areas for an understanding of the culture history of northwestern North America, for here influences were received and transmitted to the Arctic, the Asiatic North Pacific, the Alaskan interior, and the Northwest Coast, and were locally adapted and transformed to fit indigenous patterns.[10]

That this was a significant and valuable culture is noted in the depth and influence of the diffusion of its cultural traits.

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[9] Fredericka De Laguna, Chugach Prehistory, (Seattle: University of Washington Publications in Anthropology, Volume 13, 1956), p. 258.

[10] *Ibid.*

It had a profound effect upon cultures far from its own borders. Philip Drucker makes a case for the influence of Eskimo and Aleut culture on Northwest Coast tribes. He has compiled several lists of cultural traits among Northwest Coast tribes that are apparent derivatives of Eskimo-Aleut traits: "the whole Nootka Indian whaling complex, the use of human remains, and the use of mechanically operated masks and puppets and the like are all Eskimo-Aleut traits,"[11] as are some other features including the end-thrown sealing harpoon with finger holes which is most likely a descendent of the atlatl used in Aleut sea mammal hunting, and the use of urine as a detergent, a practice common to Eskimo-Aleut cultures.[12] The case for cultural diffusion from Eskimo-Aleut people toward the Northwest Coast tribes is summarized as follows:

> In fine, all the light of modern evidence fits the hypothesis that the source of the Northwest Coast civilization, as we know it from modern ethnography, was a derivation of that of the ancient Eskimo. Those old patterns were modified and adapted to the richer and milder environment in the course of time, and further modified, and eventually enriches and elaborated to new heights....[13]

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[11] Drucker, op. cit., p. 198.

[12] Ibid., p. 200.

[13] Ibid., pp. 207-208.

Salmon as a Food Staple. "He is a fish-eater....He has cod, salmon, trout, and herrings in overflowing abundance, and all swim close to his door."[14] So Henry W. Elliott observed of the Aleut out on the chain. It is not far from apt as a description of the Eskimo people of Bristol Bay both before and since the coming of white men. Although other resources were available, salmon abounded in the rivers of the area and were the dominant source of food.

There are two yardsticks which indicate the value of salmon as a resource. The first is the comparative ease with which the resource may be harvested. The red salmon make regular runs up the streams and are then highly concentrated in confined sections of the river.

> In exchange for a few hours of heavy muscular effort, a single fisherman equipped with the simplest gear could land several thousand pounds of fish--considerable more than he could consume in a year. Compared with the weeks or months of heavy labor required by most primitive peoples to produce a year's food supply, salmon fishing was highly efficient.[15]

The second reason was one no doubt recognized in a non-scientific way by Eskimos a long time ago. This had to do with the nutritional value of the salmon which is particularly valuable as a protein food. It includes important quantities of Vitamin D and provides significant amounts of Vitamins A and G. Iodine, calcium, phosphorus and other important minerals are also found.[16]

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[14] Elliott, op. cit., p. 168.

[15] Cooley, op. cit., p. 7.

During prehistoric days a wide variety of means of catching salmon were employed. Traps, gillnets, hooks and seines were all used. These basic types are still used. Traps, the most efficient technique for catching fish, were not used to any great extent in Bristol Bay due to the shallow water. Other devices, once used, were weirs, harpoons, gaff hooks, dipnets, and bows and arrows. None of these are employed for a major harvest today.

Salmon, once caught, were split, hung on poles, and allowed to dry in the sun or were smoked. Fish preserved in this fashion are easy to transport, pack, and store for the winter. Split fish were fed to sled dogs and also eaten by the people. Fishheads were buried in the tundra in a hole outside the barrabara. Left until the flesh had rotted and had begun to ferment, the heads were then dug up and eaten with gusto.

Gordon W. Hughes is quoted by Cooley as estimating that the people of this area used salmon at the rate of about 480 pounds per person each year before the arrival of commercial exploiters. His "calculations were based partly on estimates found in the journals and reports of early explorers and partly on his own statistical computations...."[17]

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[16] Ibid.

Though salmon was the main food source other kinds of food were available to this subsistence kind of culture. Various plants and a variety of fowl, other fish, and meat helped to round out the diet.

Hunting. The Aglemiute were hunters as well as fishermen. Birds, caribou, and occasionally walrus were their game. Bears too were sometimes taken. Chuck Nichols, former King Salmon resident, recounted a story indicating that in the old Savonoski area there were men who were great hunters in the old days. They would hunt bears with a stout spear. The method was to approach the bear and provoke him in the hope that he would run after his provocateur. When the bear got close the hunter would stop, turn, jab his spear into the ground at an angle toward the bear, and then hold the spear firmly while the bear impaled himself. During his reconnaissance of the area, Spurr noted that "the natives sometimes hunt the bears with rifles, but prefer to trap them, setting deadfalls, spring guns, and other devices."[18]

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[17] Ibid., p. 17.

[18] Spurr, op. cit., p. 93.

Caribou were hunted on the peninsula and the hides were used for fur clothing. In more recent times "parky squirrels" were utilized for fur parkas. Seals were also taken on occasion, and used for oil, fur and meat. That the Savonoski people hunted on the Pacific side for sea mammals has been mentioned. Clams were also utilized on these expeditions and still are occasionally sought on the Pacific side by men with planes capable of beach landings. Whales were actively sought by Aleuts who were great sea mammal hunters. Occasionally the Aglemiut also hunted whales, according to Petroff, and beluga whales are still in the area in some numbers.[19] Elliott describes the whaling harpoon as follows:

> The native hunter used, as his sole weapon of destruction, a spear-handle of wood about six feet in length; to the head of this he lashed a nearly polished socket of walrus ivory, in which he inserted a tip of serrated slate that resembled a gigantic arrowpoint, twelve or fourteen inches long and four or five broad at the barbs, and upon the point of which he carved his own mark.[20]

Birds also served an important function in this subsistence culture. Ptarmigan, a variety of ducks and geese, and other birds supply food and eggs. In the old days bird skins also were used in adjacent areas for parkas, and probably were so used by Aglemiute. Research on the Kuskokwim in 1966 showed the average hunter taking 31 geese and brants during the spring when birds return from the south. Twenty-three was the average for fall hunters. Spring ducks numbered 14 per hunter and 10 was the fall average.[21] Bristol Bay averages are probably not much different. Ptarmigan were not counted in that report, but in Bristol Bay they flock together in large numbers in December and January and for a few days they are hunted intensively. They tend to scatter and become wary after the hunting pressure mounts. Many are taken and put in the freezer, for the bag limit is twenty per day. Though egg gathering is not as great now as it was in the past, eggs are still sought by the young people, and gull eggs are considered good. The villages on the Kuskokwim collected some 40,000 eggs this way in 1965.[22] The importance of these birds and other small game should not be overlooked in the emphasis made upon salmon. A survey in the Dillingham area in 1955 reports,

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[19] Petroff, op. cit., p. 136.

[20] Elliott, op. cit., p. 151.

> Perhaps the most important staple in the native diet is provided by migratory waterfowl, ptarmigan, rabbits and other game birds and small game animals. These are taken in large numbers in all seasons by the native hunters and can be truly said to be the staff of life in

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[21] David R. Klein, "Waterfowl in the Economy of the Eskimos on the Yukon-Kuskokwim Delta, Alaska," (Montreal: Arctic Journal of the Arctic Institute of North America, Volume 19, No. 4, December, 1966), p. 328.

[22] *Ibid.*, p. 330.

many of the up-river villages.[23]

Plants. The tundra is rich in edible plant life, and Eskimo people used this abundance to supplement their diet, and made use of less palatable plants for other purposes. As an example of the latter, sphagnum moss, referred to earlier as abundant in Bristol Bay, could be used for chinking around logs or as part of the covering of a barrabara.

According to Oswalt,

> the Bristol Bay peoples gather the young wild celery stalks, and after peeling away the stringy outer layer, they eat the stems; they also cook the leaves with fish as a vegetable.[24]

Bristol Bay residents speak of a growth on the sides of a tree which is dried and chewed like tobacco. The curled shield lichen (Cetraria cucullata) was used to flavor soups of fresh fish or ducks. Woodfern (Dryopteris austriaca) has edible roots which were occasionally boiled and added to agoodak. Oswalt also notes that fireweed leaves were gathered and eaten raw, or dried to be used for tea.[25] Residents also speak of "Eskimo spinach," a long-leaved swamp plant that is boiled and mixed with sugar and crisco. Some say, "It is better than agoodak." Reindeer moss was used both as a stretcher for flour when ground and as a base for tea. Blueberries continue to be considered a delicacy, and mixed with crisco, sugar, and occasionally with herbs they become the "Eskimo ice-cream" or agoodak. Both low-bush and high-bush cranberries are important and are used for agoodak and jam.

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[23] Rogers, op. cit., p. 10.

[24] W. H. Oswalt, "A Western Eskimo Ethnobotany," (College, Alaska: Anthropological Papers of the University of Alaska, Volume 6, No. 1, December, 1957), p. 31.

[25] Ibid., p. 22.

Material Culture. Stone lamps have been found in the area at Pavik and the Camp and Bluffs phases of the archaeological work done by Dumond. Jochelson notes that the lamps were used for both light and warmth, and were of two types according to size and use. The smaller lamps were used for light; the larger for heat. Wicks were made from dry grass and placed in the middle of the lamp. Tallow, melted fat, or oil from sea mammals was used for fuel.[26] Hunters also used a small lamp on their expeditions. They were carried in the Bidarkiis or on their belts. These lamps were used for light in caves or temporary huts, but had a more important function to warm and dry hunters overtaken by cold and humidity.[27]

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[26] Waldemar Jochelson, Archaeological Investigations in the Aleutian Islands, (Washington D. C.: The Carnegie Institution of Washington, 1925), p. 73.

[27] Ibid., p. 74.

Jochelson describes the tool used in making these lamps. It was a hammer stone,

> of the hardest minerals. It was egg shaped, or discoidal in form, and served for the final chipping of stone implements and for hollowing out stone lamps.... The short hammer-stone was held in the right hand; in working with this implement, skill in handling it was more important than a powerful stroke. The stone to be shaped was held in the left hand and by cautiously striking and chipping with the hammer-stone, the irregularities of the edges and borders of the conchoidal cleavages were removed....[28]

The most common harpoon points or projectile points found in the area are of ground slate. The older phases of Dumond's archaeological exploration in Katmai National Monument also contained flaked projectile points. However, there seems to be a development from flaked to rubbed stone with some overlap in the sequence.[29] This confirms a trend found among stone artifacts at the Chaluka site in the Aleutians by Laughlin and Marsh.[30]

The ground slate objects from Naknek drainage are finely finished and beautifully symmetrical. They are in contrast to those found only a short distance away and manufactured by the Tanaina of Pedro Bay. The Townsends describe these as follows:

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[28] *Ibid*., p. 68.

[29] Dumond, *op*. *cit*., p. 119.

[30] William S. Laughlin and Gordon H. Marsh, "Trends in Aleutian Chipped Stone Artifacts," (College, Alaska: *Anthropological Papers of the University of Alaska*, Volume 5, No. I, December, 1956), pp. 5-21.

> The quality of workmanship of the finished product is not high since most of the artifacts give a technologically unfinished appearance showing coarse abrasion scratches, saw marks, and secondary serrated edges. The wide variety of types would suggest that the people had not reached a high degree of technological competence in the form and medium utilized.[31]

According to Jochelson the grinding of stone implements was a four step process. The first step involved use of coarse vesicular andesitic lava. Step two saw the use of fine lava of the same type; while the third step consisted of grinding with a smooth whetstone of volcanic tuff. Final polishing was done with a pad made from the plant known as horsetail (equisetum nyemale).[32]

Shards recovered and classified by Dumond indicate that by the beginning of the Christian era, pottery was in use in the Naknek drainage.. "Temper is predominately hair, although sand appears in varying amounts, at times in such quantity as to perhaps suggest that both materials were consciously added to the clay."[33] The shape he calls "the restricted flower pot," and decorations took the form of small checks of several shapes such as diamonds. These designs were probably impressed with a paddle.[34] Later forms saw the pottery becoming barrel shaped, with hair as the most extensively used temper. Designs became larger, and included diamond-shaped impressions. Sometime during the first millenium pottery underwent a more striking change. It was tempered primarily with sand and decorated with linear stamping. By the end of the millenium the hair temper had been put to use again and occasionally a vegetable fiber was added. Linear stamping was also replaced and diamond decorations again appeared. The pottery was also thicker and less well fired. During the years 1300-1500 A.D., the pottery became thicker, was tempered with large gravel, and the form was globular. Concentric circles replaced the diamond stamp decorations. Between 1500-1800 the pottery changed again, becoming thinner. This trend continued for another 75 years into the historic period.[35] Dumond establishes a similar cultural sequence for other artifacts.[36]

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[31] Townsend and Townsend, op. cit., p. 41.

[32] Jochelson, op. cit., p. 72.

[33] Dumond, op. cit., pp. 121, 122.

Another craft form which ought to be mentioned is the weaving of baskets. Several observers have commented on the beauty of Aleut basketry. Older local people in Naknek can recall when there were basket makers in the village, but no one now knows how baskets should be made. Mrs. Monsen's mother was an expert at the craft. Elliott claims that the finest work comes from Atka, Mrs. Monsen's home. He speaks of "the most beautifully woven baskets and mats" as being Aleut.[37] Drucker also says, "only the Aleut, in all the continent, wove finer and tighter baskets" than Northwest Coast tribes.[38] Mrs. Monsen recalls that baskets of grass were so tightly woven that they could serve as water-containers, and regrets that no one now has the skill or interest to keep the art alive. Grass baskets found in the local store usually come from Hooper Bay or other villages of the Kuskokwim delta.

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[34] Ibid., p. 122.

[35] Ibid., pp. 124-126.

[36] Ibid.

Houses were dug into the earth and then covered with rafters which supported sod, hides, driftwood, or almost anything which would suffice as a covering. Housing from Siberia to Kodiak was very similar. Rudenko notes that the Chukchi, who inhabited the Siberian coast across from the Diomede Islands, used pit houses that must have been similar to those of the Aleuts.

> Their interiors had the form of an elongated rectangle. The roof was made of beams and whale bones, covered with

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[37] Elliott, op. cit., p. 181.

[38] Drucker, op. cit., pp. 100, 101.

> grass and sod and heaped with earth. The entrance to the house was through a special hole in the roof. The hearth was in the middle.[39]

With some important variations this is essentially the pattern of aboriginal homes in Bristol Bay. A good picture of such a house can be found in Indians of the Americas.[40]

The Aglemiut houses are described in the Eleventh Census Report as follows:

> The Aglemiut...construct their dwelling chiefly underground, with a roof of driftwood and sods, the latter often reinforced with walrus hide. Whale ribs are often found in these structures, serving as rafters or posts.[41]

The Kiatagmiut, according to the same report, had added another feature; an entrance which was a

> tunnel-like passage affording ingress and egress from 10 to 12 feet long and not more than 3 feet high, declining from the outer entrance and then rising again and entering the room through the floor. A few small cavities in the sides of the tunnel afforded places of deposit for offal and lairs for the numerous dogs.[42]

Although uncertain that Aglemiut houses had similar tunnels Dumond feels it is reasonable to assume they did have.[43] Present residents would confirm this. Mrs. Monsen chuckles as she recalls how low she had to stoop and crawl to enter the barrabaries in Naknek.

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[39] Rudenko, op. cit., p. 109.

[40] Matthew W. Sterling, Indians of the Americas, (Washington D.C., The National Geographic Society, 1961), p. 139.

[41] Porter, op. cit., p. 169.

[42] Ibid.

[43] Dumond, op. cit., p. 34.

Savonoski houses were probably raised with logs used for walls since timber was more readily available in that region. Dumond cites sources which indicate that they were higher from the ground, with wooden floors and platforms for sleeping.[44]

One pit house in Naknek was unusually large and was a "Kashgee" or men's house. Taddy Monsen recalls peering into it when he was a boy. It was a combination sweat-bath, workshop and clubroom where the men of the village visited, worked on equipment or performed ceremonial functions. Men visiting the village were also housed there.[45]

One interesting side-light on housing comes from Elmer "Red" Harrop, who says that when wood first came into the country with the canneries, the native people built big, flat-bottomed boats and made sails. In the fall they would go up-river to trap and hunt. They dug up the tundra and stacked the sod for walls. They would then turn their boats upside down on the sod walls to make a roof, put the sail over the whole thing and weight it down with sod. This was used as a trapper's cabin through the winter, and, "it was plenty snug." In the spring the cabin roof was turned over again, and sailed down river for the summer fishing season.[46]

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[44] Ibid., p. 35.

[45] Taddy Monsen in conversation.

There are several old village sites which can be visited with a class. It should be noted that such visits are not for purposes of digging for artifacts but to see the outlines of the pit houses, their arrangement and location and to show why the particular site was chosen. Sites are listed according to accessibility.

1. The "Indian Diggings." This site is located on the north side of Naknek River along the high bank just a quarter mile below the Nornek Cannery. Formerly known as Pauwick or Pavik, outlines of the old pit houses can be found along the top of the bank. This site is a 10 minute walk from Naknek School.

2. Leader Creek. This is a site located on a bare, grassy flat on the point where Leader Creek runs into the Naknek River. The site is on the north side of Naknek River and the east side of Leader Creek.

3. CRPA Site. This is located on the south side of Naknek River a short distance above CRPA cannery.

4. Savonoski. The new village located on the south side of Naknek River is 8 miles above Naknek Village. One

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[46] Elmer "Red" Harrop in conversation, March 7, 1966.

family still lives there and there are a few buildings including one quite impressive Orthodox Church.

5. Old Savonoski. Savonoski River drains through a big pumice flat or delta into the Iliuk Arm of Naknek Lake. This village, up the river on the south bank, was buried in 1912 by the ash from the eruption of Katmai which is located about 30 miles south of the village. The inhabitants moved to New Savonoski.

Other sites are listed by Dumond.[47] He has also compiled a chronological list of the sites he explored on an archaeological survey of Katmai National Monument. The dating is based on carbon testing of the artifacts and the volcanic ash which is found in ten major known deposits in the vicinity. This gives the basis for his construction of the cultural continuum of Naknek drainage.[48] The Archaeological Survey may be found in Appendix D.

Eskimo and Aleut Language. There are some facts about language, and particularly as spoken in this area, of which teachers should be aware. People in this area suffered the practical destruction of their culture when the white men came. Aleuts and others were compelled to learn Russian in order to converse with their overseers. Veniaminov helped them develop a written form for their language, based on the Cyrillic alphabet. Old Slavonic language became a necessity for people who were communicants in the Russian Orthodox Church, and Russian was the conversational language between clergy and laymen.

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[47] Dumond, op. cit., pp. 50-73.

[48] Donald Dumond, "Archaeological Survey in Katmai National Monument, Alaska, 1963," unpublished mimeographed report to the National Park Service, 1964, p. 7.

When the United States purchased Alaska in 1867, these people could not make an immediate shift in language habits and patterns. Unfortunately,

> rash and inexperienced American newcomers publicly blamed the Russian Church and its prelates for all unsanitary and immoral aspects of Alaskan life. The Russian prelates defended themselves and their church vigorously...[49]

The controversy became bitter and was nourished for decades by extremists on both sides. Thus the native people came to

> regard English education as a device to wean them from their religious faith. The introduction of compulsory English schooling caused a minor renaissance of Russian culture as the Aleut parents sought to counteract the influence of the schoolroom....Regulations forbidding instruction in any language other than English increased its unpopularity...every restriction against teaching Russian was interpreted as an attempt to eradicate the Aleut tongue. ...To too many officials anything in

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[49] Richard Henry Geoghegan, The Aleut Language, (Washington D.C.: United States Department of the Interior, 1944) p. 2. From facsimile reproduction (Seattle: Shorey Book Store, 1964).

> Cyrillic letters was Russian and something to be stamped out.[50]

With a heritage like this it is no wonder that English is not a popular subject in school.

Too many outsiders consider the native language to be crude and difficult, although Spurr writes that,

> The language is a rich one, highly inflected, and capable of a great variety of expression. It has many gutteral sounds...but when one has become accustomed to these gutterals the language is far from unmusical.[51]

A word from professional linguists is appropriate to our interest in language.

> The native speaker uses this complex apparatus easily and without conscious thought of the process. It seems to him simple and natural. But to a speaker of another of the world's three thousand languages it may present quite a different picture. It may give an impression of being cumbersome, illogical, or even ridiculous. Actually, of course, the strange language is merely different. A true picture of language can only be had by seeing languages more objectively. Such a view will emphasize the immense complexity, the arbitrariness, and the high degree of adequacy for their purposes--features which are shared by all languages in spite of their divergencies.[52]

Linguists seem agreed that when man became Homo Sapiens he already possessed developed languages. The minimum number of words in any language is believed by some to be about

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[50] Ibid.

[51] Spurr, op. cit., p. 93.

[52] H. A. Gleason, Jr., An Introduction to Descriptive Linguistics, (New York: Holt, Rinehart and Winston, 1961), pp. 3, 4.

19,000, and there is no evidence as yet found that would indicate there have been languages with smaller vocabularies since the days of the Upper Old Stone Age.[53] It seems clear that Eskimo-Aleut languages, like the people who speak them, are neither better nor worse than the white men's language and people. They are "merely different."

There is a unique kind of uniformity among the Eskimos as to language. There is only one major linguistic break among Alaskan Eskimos. This occurs "in the vicinity of Golovin on the north coast of Norton Sound, a boundary that represents a major cleavage within Eskimoan."[54] The term Inupik is given to the language used to the north and east. The western Eskimo language is called "Yupik."[55] This latter group has been divided into three major "dialect clusters," designated "Yuk," "Cux," and "Sux." Yuk is the dialect cluster used in Bristol Bay and along the Kuskokwim and as far north as Golovin. "The Yuk-speaking Eskimos think of themselves as Yupik or 'real people'...."[56] Spurr observed that "From the region of Kolmakof on the Kuskokwim to Katmai the language of all the natives we encountered was the same...."[57] Cux is used only by Nunivak Island people. Sux is located in the Prince William Sound, Kodiak-Afognak area, and on the Pacific side of the Alaska Peninsula.[58]

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[53] Driver, op. cit., p. 556.

[54] Van Stone, op. cit., p. xx.

[55] Ibid.

[56] Ibid.

Geohegan evidently was not familiar with these language patterns. He reports that

> In America the islanders living on Kodiak Island, on the Aleutian and Andreanovski Islands are generally called Aleuts. However, the language of the first is wholly different from that of the others.[59]

The reason for his difficulty probably stems from the fact that the Koniagmiute, the residents on Kodiak, are Eskimo rather than Aleut. This is borne out by Geoghegan's own evidence:

> Dr. Svend Fredericksen of the University of Copenhagen informed me that specimens of the language spoken on Kodiak Island which I sent him were readily understandable. He is thoroughly conversant with Greenlandic Eskimo. However, the examples of Aleut I submitted, with the exception of an occasional word, were not comprehensible. And the Reverend Hinz, who has written a grammar of the Kuskokwim Eskimo dialect reported that although he could understand the samples of Kodiak dialect the Aleutian seemed almost a foreign tongue.[60]

In spite of the apparent uniformity of language, however, regional differences did exist and still cause some difficulty today. Spurr noted that,

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[57] Spurr, op. cit., p. 93.

[58] Van Stone, op. cit., p. xx.

[59] Geoghegan, op. cit., p. 17.

[60] Ibid., p. 7.

> in the various districts different dialects exist, which vary so much sometimes that the traveler who has obtained some knowledge of one dialect is unable to understand another until he has become somewhat used to it. Even between two such closely adjacent settlements as Savonoski and Katmai there is a marked difference of speech.[61]

Residents of the area bear this out, for they report that even down on the Aleutian chain from one island to the next, no two people seem to pronounce words the same. In old days, the people say, it was very difficult for people of one village along Naknek River to communicate with the people of another village. Even neighbors do not now use the same pronunciation for the various words they do have in common. However, empathy, gestures, and patience make it easier.

An interesting new use of language by linguists is glottochronology, a method "of classifying languages and estimating how long ago various daughter languages diverged from ancestral tongues."[62] A selected group of about 100 words is used in the process. These words are chosen because experiments in comparative linguistics have found that most of them occur in every language on earth. They are also considered to be "culture free" since they are found in simple as well as complex cultures.[63] Studies show that languages retain about 80 percent and lose about 20 percent of this basic vocabulary every one thousand years.

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[61] Spurr, op. cit., p. 93.

[62] Driver, op. cit., p. 571.

> In other words, if one begins with a known mother language, such as Latin, he will find that after a thousand years the daughter tongues will retain about eighty percent of these basic or conservative words and will have lost and replaced the remaining twenty percent.[64]

Linguists believe all languages change at about this same rate. This study is especially pertinent to this border area of Eskimo-Aleut relationships for there is a correspondence between Eskimo and Aleut languages. According to Laughlin and Marsh,

> we can now show that the fundamental structure and some of the basic vocabulary corresponds in the two languages. The percentage of basic vocabulary correspondence in Aleut and Eskimo indicates that these two branches of the common language, proto-Aleut-Eskimo, separated some 4,000 years ago.[65]

The authors point out the significance of this by adding:

> We thus find that the linguistic evidence further corroborates the proof from our recent physical, archaeological and ethnological research that the Aleuts and Eskimos are members of the same stock. Likewise the linguistic chronology confirms the period of separation of the Aleuts from proto-Aleut-Eskimo, which is independently

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[63] Ibid., p. 573.

[64] Ibid.

[65] W. S. Laughlin and G. H. Marsh, "A New View of the History of the Aleutians," (Ottawa: Arctic Journal of the Arctic Institute of North America, Vol. 4, No. 2., September, 1951), p. 86.

indicated by the archaeological evidence.[66]

Dumond is not so positive of all this. He indicates agreement with Swadesh that Eskimo and Aleut language, diverged at 2900±400 years ago.[67] He also states

> Between the speech of Eskimos of Bristol Bay and those of the Pacific Coast there is no evidence of a divergence of a magnitude similar to that between Eskimo and Aleut. The Yupik speech of the Aglemiut and the Koniag is, indeed, mutually intelligible...although definite dialectical differences do exist and at times communication is difficult...and because the geographic position of all other Yupik dialects, as well as the related Inupik language, is north and west of the Alaska Peninsula, one is forced to conclude that the direction of linguistic expansion...was more likely from Bristol Bay toward Kodiak.[68]

The conclusion which he draws from his study is,

> What language inhabitants of this area may have spoken before this time (2nd millenium A.D.) is, of course, uncertain. But there is no existing linguistic evidence that their language was Eskimo or even Eskaleut.[69]

Though glottochronology is far from an acceptance as a fully accurate method of linguistic analysis, it is an interesting approach nonetheless and should help students develop skill in seeing relationships and increase discrimination ability.

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[66] Ibid., p. 87.

[67] Donald E. Dumond, "A Note on the Prehistory of Southwestern Alaska," (College, Alaska: Anthropological Papers of the University of Alaska, Volume 12, No. 1, Winter 1964), pp. 41, 42.

[68] Ibid.

[69] Ibid.

Following is a list of the words used in glottochronology with their equivalents in the local Eskimo dialect. The equivalents are according to Mrs. Anisha McCormick who is fluent in the old local dialect. Only four of the one hundred words do not have an equivalent listed. These words are used in most current studies in glottochronology and show an average rate of retention of about 86% per thousand years.

1.	I	quee-na
2.	thou	thee-put
3.	we	qwung-koo-ta
4.	this	oon-na
5.	that	dow-na
6.	who	kee-na
7.	what	ai
8.	not	bee-oon-he-took
9.	all	da-mum-ta
10.	many	um-slah-toot
11.	one	a-dow-gik
12.	two	mul-hok
13.	big	ung-oock
14.	long	duk-uck
15.	small	mik-uck
16.	woman	uch-nok
17.	man	ung-oon
18.	person	dock-o
19.	fish	chai-ee-yuk
20.	bird	chee-loom-ach
21.	dog	kee-moch-ta
22.	louse	na-hus-ta
23.	tree	na-pa
24.	seed	now-stuh-kok
25.	leaf	choo-ya
26.	root	a-chith-kok
27.	bark	na-bum-cut-cheea
28.	skin	cut-cheea
29.	flesh	ka-muk
30.	blood	ouk

31.	bone	nun-uck
32.	grease	o-gool-suck
33.	egg	guy-yon-ook (bird)
	egg	ma-luk (fish)
34.	horn	
35.	tail	bon-yook
36.	feather	muth-kok
37.	hair	new-yuk
38.	head	ook-sok
	(branch river)	kam-ee-kok
39.	ear	chee-on
40.	eye	ee-nok
41.	nose	coong-ok
42.	mouth	kan-nok
43.	tooth	koon
44.	tongue	a-loong-a
45.	claw	stook
46.	foot	it-hok
47.	knee	chis-cok
48.	hand	ai-hok
49.	belly	ok-sok
50.	neck	oo-ya-cok
51.	breasts	ahm-ok (woman)
	breasts	cut-hok (male, or animal)
52.	heart	oon-oo-vun
53.	liver	booc-down
54.	drink	downg-ok (means both drink water and become intoxicated)
55.	eat	nok-chree
56.	bite	ch-he
57.	see	dong-kai-oo
58.	hear	nee-tok
59.	know	na-schoon-ha-ee-tan
60.	sleep	kow-wok
61.	die	doo-kok
62.	kill	doo-koo-tan
63.	swim	quee-mok
64.	fly	toong-ok
65.	walk	book-ok
66.	come	die-gee
67.	lie	ee-noch-toon
68.	sit	a-coo-me
69.	stand	na-huch-ton
70.	give	chik-kee-ho

71.	say	ka-mough-tok
72.	sun	a-gauh-ta
73.	moon	ee-cawh-luk
74.	star	ugh-yok
75.	water	mok
76.	rain	slah-thook
77.	stone	see-muk
78.	sand	cowgh-yuk
79.	earth	noo-na
80.	cloud	aw-mil-rook
81.	smoke	boo-yuk
82.	fire	cun-nok
83.	ash	boo-yoo-thuk
84.	burn burn	oon (injury), coong-yoo (object)
85.	path	doom-ya-hok
86.	mountain	ing-heck
87.	red	cav-il-hai-ya
88.	green	choong-nok
89.	yellow	
90.	white	cot-ul-hai-ya
91.	black	da-lul-hai-ya
92.	night	oon-nuk
93.	hot	book-the-tok
94.	cold	co-da
95.	full	mee-oogh-dok
96.	new	noo-ta-hok
97.	good	a-sih-tok
98.	round	a-ga-gun-ch-th-hee-a (as a ball is round)
99.	dry	kee-nough-tok
100.	name	a-tuk

The sounds of speech have been analyzed by linguists with some interesting results. Speech may be broken down into the distinct elements of sound, called phonemes. These are features of the spoken language, and thus are distinct from written components of language called graphemes. A second basic unit of the expression system is the morpheme. Morphemes are typically composed of several phonemes and have a relationship with the content as well as the sound of language.[70] The sounds of Eskimo speech may seem strange because our untrained ears are not in the habit of distinguishing sounds clearly, but even the strangest sounds of Eskimo have parallels with our language. Two examples of this are pointed up by Driver.

> In English the sound "tl" occurs in that sequence in the terminal or medial position, as in battle or in battling, but never in the initial position. For this reason the pronunciation of Indian words with "tl" in the initial position, as in anglicized "Tlingit" is difficult for the English speaker.[71]

Similarly the "ts" sound occurs on plural nouns in English in the terminal position. On occasion it occurs in the middle of a word, like "catsup." But in Indian languages it frequently appears initially and is difficult to pronounce.[72] The Kuskokwim dialect has the word "tsikiun," or gift. This difference in the context of sounds may make pronunciation and hearing both very difficult for the outsider who may unjustifiably feel that the local speech is more slovenly than his own.

The next list is a very limited list of words in common use in the area. This list was compiled by Mrs. McCormick and interested students at Naknek High School

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[70] Gleason, op. cit., pp. 10, 11.

[71] Driver, op. cit., p. 558.

[72] Ibid., p. 559.

"A"

Airplane Lake	Ung-roo-ting
all	da-mum-ta
aunt	an-na'-na
ash	boo-yoo-thuk

"B"

bark (as of tree)	na-bum-cut-cheea
bath house or steam bath	ma-gae
beans	bu'pik
bear	da-goo-ga
beaver	ba-lōk-tok
belly	ok-sok
berries	ut-sut
big	ung-ook
Big Creek	kit-mick-ta-lee
bird	chee-loom-ak
bite	ch-he
black	da-lul-hai-ya
blood	ouk
bone	nun-uck
bone fish	lum-chuk
boot	aw-la'-pak
bread	glee-puk, or a-sal-yuk (flour, water, salt; fry in deep fat)
breasts (woman)	ahm-ok
breasts (animal or male)	cut-hok, ung-oon
Brooks River	Ki-ti-vick
burn (injury)	oon
burn (object)	cung-ook
butter	mus luk

"C"

candy	gun-fee'-tuk
cat	goos-gok
Coffee Creek	Too-loong-mute
cold	cō-da

cigarette	bee-oogh-tuk
claw	stook
close	bat'-u
cloud	
coffee	goo-fi-uck
coffee pot	goof-ee-ya-lee-vik
come	die-gee
come eat	na-haiee
cousin (boy)	ee-look
cousin (girl)	noo-lee-ach
C.R.P.A. Cannery	Koo-choong
cup	chush-kok

"D"

Diamond M Cannery	Ker-toong (high up)
Diamond O Cannery	Nak-nek-muk-mute
die	doo-kok
dog	kee-moch-ta
door	ba-doo
drink	downg-ok (means both drink water and become intoxicated)
dry	kee-nough-tok

"E"

ear (Naknek)	chee-on
ear (Bethel)	chu'-tee
earth	noo-na
eat	nok-chree
egg (bird)	guy-yon-ook
egg (fish)	na-luk
enough (or, that's enough)	doy
Eskimo Creek	Kup-nung (crooked)
evil spirit	mus-ka-la'-dux
eye (Naknek)	ee-nok
eye (Bethel)	ee-nuk

"F"

fancy	be-cha-ry
fat	oog-ook
fat man	ook-koo-re-uk
fear	eee-gha-nuck-fa
feather	muth-kok
fingernails	stooks
fire	cun-nok
fish	chai-ee-yuk
fish (salted)	sal-oo-nuk
fish (actually dried fish strip taken from the back)	lum-chuk
flesh	ka-muk
fly	toong-ok
foot	it-hok
fork	wee-lik-gok
fox	guv-ee-yak
full	mee-oogh-dok

"G"

ghost	chug-ai'-acks, or moo-ney
girl	ugh'-a-nuk, or thloo-huk
give	chik-kee-ho
good	a-sih-tok
go to bed	ee-nugh-ton
grandma	um-a
grandpa	up-pa
Grassy Point	Koo-yieg-zuk
grease	o-gool-suck
great grandfather	um-oun
green	choong-nok

"H"

hair	noo-yuk
hand	ai-hok
have some more tea	cha-lee
Henry's Lake	Kay-ak-wak
here (as when handing something to...)	gee-ta
hot	book-the-tok

head (Branch River)	ook-sok, or kam-ee-kok
heart	oon-oo-vun
hello	cha-mai
hurry up	chu-ga'-muck
Hungry's	Eck-fa-chuk (small cliff)
Hungry's Lake	Pa-zoo-too-lee

"I"

I	quee-na
I don't know (Naknek)	na-thloo
I don't know (Bethel)	na-ma-gey'ga
I don't know (Iliamna)	na'-muth
it's not true (or, you're fooling)	ik-cloo-too-ten

"J"

jeep	ee-gum'-gok
Johnson Hill	Un-va-too-lee (big wheel)

"K"

Katmai Mountain	Poo-yoo-lik (smoking)
kill	doo-koo-tan
King Salmon Creek	An-uck-us-lee
King Salmon Airport	Ung-oo-ya-tuk-mi-char-a
kiss	boo-chuk
knee	chis-kok
knife (skinning)	oo-loo-wok
knife (woman's)	ooo-la
knife (paring knife)	kneef'-buk, noo-sik
know	na-schoon-ha-ee-tan
Koggiung	Kow-young (sandy)

"L"

lazy	saw-das'-too-a
Leaders' Creek	Kum-vick
leaf	choo-ya
Libbyville	Muk-uck-mute
Libbyville "Graveyard"	Bung-wak-mute
lie	ee-noch-toon
little beaver	ucks-a-doo'-yuk
liver	booc-down
long	duck-uk
louse	na-hus-ta

"M"

maggotts	boo-gal-luk
make mud pies (or, to play; also is flower or playthings)	noung-wuk
make the sign of the cross	ma-lees
mammary gland	ahm-ok
man	ung-oon
man (native)	da-hō-pi-ak
man (white man)	gus-ak-uk; or gus-ak-ee-ak-uk
many	um-slah-toot
marrow	but-uck
me too	we-na'-cha-lee
Merry Christmas	pros-ni-kum
milk	moo-loo'-kuk
Monsen's Creek	Kee-took-soong (clay)
more (have some more tea)	chal-lee
moon	ee-cawh-luk
mountain	ing-heck
mouth	kan-nok

"N"

Nakeen Cannery	Noon-uck-leek
neck	oo-ya-cok
new	noo-ta-hok

Naknek	Knug-yuk (muddy)
Naknek Lake Island	Na-roo-la-too-lee
Naknek Point	loo-vook (point)
Naknek Pump Lake	Eloo-too-buk
name	a-tuk
nice	a-sikh'-tdak
night	oon-nuk
night cap	ga'-buck
no	no, or nu
no good	a-see-too-ten
Nornek Cannery	Pawg-young
nose	coong-ok
not	bee-oon-he-took

"O"

old lady	ugh-a-na-sa-guk
Old Savonoski Mountains	Kow-too-lik
older sister	awl-la
one	a-dow-gik
ouch!	ak'-ka'!, all-ai'-ee
outhouse	nu-schnick

"P"

P.A.F. Cannery	Mur-a-huk (swampy)
path	doom-ya-hok
person	dock-ō
Point above Savonoski	Kumg-va-lee
Point across from Red Moore's place	Kow-yar-ak
priest	gu'-suk

"Q"

quiet	uch-ja (shut-up!)

"R"

rabbit	oos-ga-nuk
Red Salmon ways	In-la-wak

rain	slah-thook
Rapids	Du-vin-ruk
Rapids Hill	Kup-oot-wat
red	cav-il-hai-ya
Red Salmon Cannery	Smoo-too-lee
Red Salmon Pump Lake	Nun-vō-luk (old lake)
	(playbed)
Reindeer Point	Chi-nik-us-lik
right here	dung-wha-nee'-wha
ring	cu-tuk
round (as a ball is round)	a-ga-gun-ch-th-hee-a

"S"

salt	doch-yok
sand	cowgh-yuk
saucer	blu'-tsak
Savonoski	Os-loo-luk (had flooded)
Savonoski Hill	Ing-zee-ak (small knoll)
say	ka-nough-tok
see	dong-kai-oo
seed	now-stuh-kok
shame on you	oo-nuk'-wan-ee
Ship Creek	Poo-zoo-yō-lak
shoes (made of skin)	kam-uk'-suks
sleep	kow-wok
Sloviak Creek	Chi-ming-yoong
Smelt Creek	Sloo-vik
smoke	boo-yuk
snuff	ick-mick
sock	choo-keuk
South Naknek	Kee-noo-young (crying)
spoon	loo-sik-ok
star	ugh-yok
stew kettle	oogh-un
stone	see-muk
stop	doo-oi (that's enough)

shut up!	uch-ja
sit down	a-coo'-mee
skin	cut-cheea
sugar	cha-ha-luk
Sugar Loaf Mountain	un-ung-nuk
sun	a-gaugh-ta
swim	quee-mok

"T"

table spoon	loo-sik-ka-buk
tail	bom-yook
tea	chai-ook
tea kettle	chai-neek
Telephone Point	Ool-si-nuk
thank you	gwee-yan-a
thank you very much	goo-yan-a-chuk-nuk
that	dow-na
this	oon-na
thou	tee-put
tongue	a-loong-a
tooth	koon
two	mul-hok

"U"

underwear (girls')	kooth-ee-ok
unsatisfactory	a-see'-too-ten
up there	beeng-na

"V"

vicar (one who takes care of the church and its money)	sta'-ris-tuk
vomit	megh'-ee-uk

"W"

walk	book-ok
water	mok
white fish (dried)	mut-chu-duk

we	gwung-koo-ta
whale skin	muk-tuk (food)
what	ai
what for	chug-a'-muk
where	now-wha
white	cot-ul-hai-ya
white man	gus-ak'-uk, or (when scornful) gus-ak'-i-a'-kuk
who	kee-na
window	hah-luk
woman	ach-nok

"Y"

yes	awng, or ee-yee

(No letter "X" or "Z" in compilation.)

A teacher using this material in a high school social studies class would probably not want to undertake a unit on local language by himself. However, some local people would be willing to assist in the classroom, and should be encouraged to come to the school to help. Following is a pronunciation guide based on the Eskimo grammar developed by Reverend John Hinz for the people of the Kuskokwim.

a in an open syllable sounds like the a in father or car. Nuna, "land." When closed by a consonant it sounds the a in hat, pat, at. nunat, "village."

e as ey in they. taile, "let him come." Before k, y or rr the e sounds as in neck or err. mek, "water."

i as in it. itlpit, "you." Sometimes it has an ē sound as in machine. igtak, "falls down from."

o	as in often. okok, "seal oil." At the end of a word it sounds like o in so. kako, "when?"
u	as in mule. nuna, "land." Or as the o in who. una, "this."
f	as in father. ukfartak, "believes."
g	after an a, u, or i it sounds like ch in German ich. Ayagtok, "went away." Between two vowels it sounds like German g in Regen. igartok, "writes."
k	usually gutteral. Sometimes written q. kayak, "kayak."
k	as k in kill. kina, "who."
l	as in holy. litok, "learned"
tl	sounds like tl in bottle or softly. tikitlune, "having arrived."
m	as in me. mek, "water."
n	as in no. nuyat, "hair."
ng	as in sing. Between two vowels it always belongs to the following vowel. pi-ngok, "has received."
p	as in poor. puyak, "smoke."
r	is quite different from English R. It is articulated far back in the mouth. aramak, "woman."
rr	a double r used only between two vowels. atorra, "uses it first."
s	between two vowels is voiced as in houses. asigortok, "goes up stream." Before a consonant it is like ss in hiss. piska, "commands him."
sh	as in ship. ashitok, "is bad."
ts	as in German Zunge. tsiko, "ice."
tsh	as ch in chapter. tsha, "what."
t	as in ten. takok, "stops."

v as in event. At the beginning of a word it sounds like wh in whale. vinga, "I."

y as in you. yuk, "a person."

Diphthongs are as follows:

ai as in aisle. taigok, "comes."

au as in out. auk, "blood."

oi as in oil. toi, "so" or "then."

The consonants tl, ng, sh, ts, tsh belong together and are not divided. Accent in three syllable words is generally placed on the second syllable. Many words of four syllables take accent on the third. Long words usually take the accent on one of the last four syllables, usually the penult. Eskimo has neither the definite nor indefinite article, and there is no distinction regarding gender.[73] Reverend Hinz has a much more detailed description of these uses, but this should help those who listen to local dialects, and ought to be enough to give direction to any teacher who undertakes a language unit at school. It should be noted that Geoghegan has a similar scheme for Aleut and this may be studied also for comparison and analysis.[74]

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[73] Reverend John Hinz, Grammar and Vocabulary of the Eskimo Language, (Bethlehem, Pennsylvania: The Society for Propagating the Gospel, 1944), pp. 1-4.

[74] Geoghegan, op. cit., pp. 8-10.

Social Structure. The Eskimo's social structure was neither highly formalized nor complex. There were two groupings. The first centered around the primary family and the other was focused on the village or hunting band. Beals and Hoijer note that the latter unit "is highly transitory and rarely united the same individuals over more than one season; the primary family is the only social grouping which has some degree of stability."[75] The scarcity of food prohibits large concentrations of population for more than brief intervals.

> There is no village head, nor any governmental structure; and, except for the fact that patterns of hospitality and comradeship require the families to share their food and other resources, each family is quite independent of the rest....[76]

Hulley, however, says that "Each settlement was usually headed by a chief possessing little authority. Much influence was wielded by the shaman or medicine man."[77] Driver points out that the primary family "was frequently broken by the high mortality and by wife-exchange."[78] The headman was the "best hunter and most capable man in the village,"[79] and he achieved his status simply on the basis of performance.

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[75] Ralph L. Beals and Harry Hoijer, *An Introduction to Anthropology* (New York: The Macmillan Company, 1959), p. 445.

[76] *Ibid.*

[77] Hulley, *op. cit.*, p. 21.

[78] Driver, *op. cit.*, p. 326.

[79] *Ibid.*, p. 327.

> The Eskimo shaman also enjoyed a role of leadership because he was thought to be able to locate or attract game animals in time of need, and it was also his responsibility to ferret out confessions from those who had broken taboos and thus jeopardized the hunting luck of the entire group.[80]

Dumond says, "There is no indication that the Aglemiut differed substantially in social organization and practices from their neighbors to the north." He reported that the Eskimo in Savonoski "had a leader, 'angookakh,'" but did not come to any conclusions about his character or responsibilities.[81] It would seem reasonable that this was a pattern that prevailed throughout the Eskimo territory. Similarity in artifacts, language, and subsistence pursuits have already been noted. It would be strange if the social organization, though having some differences, were not essentially similar.

Religion, Ceremonies, Burial Customs. Anthropologists see religion

> as the relation of man to supernatural personalities with anthropomorphic attributes. It includes animism which is defined as the belief in spiritual beings or personalities.[82]

Some men seem able to influence the spirits and bend them to do their bidding through techniques called magic. Driver notes that "Indians normally employ mixed systems of religion, magic and practical science which are difficult to analyze even with the aid of terms in native languages."[83] Though religious organizations are lacking in Eskimo culture, religious meetings were held for anyone who cared to come.[84]

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[80] Ibid.

[81] Dumond, op. cit., p. 37.

[82] Driver, op. cit., p. 479.

Eskimos generally had an acknowledged religious leader, or holy man, known as a "shaman." The shaman was a special man who was possessed by spirits. He could commune with the spirit world by sending out his own spirit while in an apparent trance state or by receiving outside spirits into himself. Driver calls this soul flight one of the definitive aspects of Eskimo religion.[85] Dumond says it is likely that the "leader" or "angookakh" in the Old Savonoski village was a shaman.[86] Though predominantly men, a woman past the menopause occasionally became a shaman.

The work of a shaman consisted of predicting and controlling the weather, a task obviously related to the food necessity. Subsidiary tasks were to cure illness and assist barren women. The shaman was usually a skilled manipulator and master of sleight-of-hand. Like North American Indians, Eskimos believed in spirits. According to Driver there are three kinds of human souls distinguished by Eskimo religion. One is the immortal spirit which leaves the body when death occurs and enters the spirit world. A second is the breath and warmth of the body which ceases at death. There is also a "name-soul" which lives for a time in the world of spirits but may be re-incarnated in the body of a baby descendant.[87]

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[83] Ibid., p. 481.

[84] Ibid., p. 487.

[85] Driver, op. cit., p. 511.

[86] Dumond, op. cit., p. 37.

Driver points out also, "If there is any recurrent theme threading through all Eskimo religion, it is the consistent association of everything religious with the food quest."[88] The Eskimo

> alleviated his anxieties over hunger by imagining that help could be obtained from the supernatural. Religion thus became an outlet for anxieties over problems beyond natural solution; the antics and verbalizations indulged in to influence the supernatural served to reduce highly charged emotions and relieve tensions.[89]

Paul Radin holds that the system of the shaman, his involvement in religion, and his spectacular healing techniques are really part of a complex mechanism designed to serve a double purpose: "to keep the contact with the supernatural exclusively in the hands of the "angakok," and to manipulate and exploit the sense of fear of the ordinary man.[90] The relationship which Driver sees between religion and economics is also a relationship whose chief characteristic is fear, according to Radin. He quotes a shaman's reply to the question, "What do you believe?" The answer was,

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[87] Driver, op. cit., p. 511.

[88] Ibid., p. 514.

[89] Ibid., p. 515.

> We do not believe. We only fear. And most of all we fear Nuliajuk, the mother of beasts....All the game we hunt comes from her....We fear those things which are about us and of which we have no sure knowledge, as the dead, and the malevolent ghosts, and the secret misdoings of the heedless ones among ourselves.[91]

Radin goes on to point out that the shaman has thus combined "fear of economic insecurity, first, with the magical formulae and taboos and, secondly, with the fear of deceased human beings."[92] He goes on to point out that the dead are feared not merely because they are dead, but because they are nevertheless human beings, whose activities cannot be controlled as well as when they were alive, even though that control may have been inadequate.[93]

Dumond suggests two ceremonies which were common to Naknek residents: the "Asking Feast," and the "Messenger

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[90] Paul Radin, Primitive Religion, (New York: Dover Publications, Inc., 1957), p. 52.

[91] Ibid.

[92] Ibid., p. 53.

[93] Ibid.

Feast."[94] Though there is no reason to doubt this the details can only be surmised. Margaret Lantis says,

> There is no information on the Bristol Bay-Alaska Peninsula area. Possibly a cultural boundary line could be drawn just south of the Kuskokwim. However, the apparent gap between the latter and Kodiak is undoubtedly due to meagre source material rather than to any abrupt cultural difference.[95]

It would seem that a number of ceremonies common to Koniag and the Kuskokwim people were shared by Aglemiut.

The name for the Messenger Feast stems from the custom of formally inviting other villages to take part in the ceremony. Messengers were sent to notify them of the kinds of gifts that were expected. There were two aspects to the ceremony itself. The first was a dance in which life-like imitations of animal habits, hunting scenes, and warfare were given by masked dancers. This was a kind of hunting festival designed to please the spirits. The feast night followed several days of dancing and featured the second element, the gift exchange. The headmen of the two villages would compete in the giving of gifts.[96]

The Asking Feast also involved two aspects; a pairing off of couples for the night, and an exchange of gifts between men and women. It's name derived from the first activity. Dancing, joking, and singing occurred throughout the evening.[97]

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[94] Dumond, op. cit., p. 37.

[95] Margaret Lantis, Alaskan Eskimo Ceremonialism, (Seattle: University of Washington Press, 1947), p. 115.

Another ceremony probably practiced by Aglemiuts revolved around the salmon and the return of the bones of some fish to sea. This has already been alluded to in Chapter Three. The reasoning behind it has been described as follows:

> Salmon hatch high up in the rivers. As small, unsalmonlike fish called parr they swim down the rivers and disappear into the sea. No one knows where they go. After a number of years, when they are full grown, these creatures return to the exact place in which they were spawned to spawn in their turn, and literally kill themselves to do so.
>
> The Indians saw the salmon running up the rivers each year. They saw how those that they themselves did not kill finally died in the high waters. They did not associate the parr with the salmon. They came to the conclusion that these fish were immortal. The fish swam into the rivers voluntarily to feed mankind (and bears), died, and were reborn in the ocean. Here was something that called for major ritual in order to keep it going, as well as for great care in returning all salmon skeletons intact to the water.[98]

There is no certainty about burial practices in the Naknek region. Local residents refer to several different methods in different places throughout the area. Hulley confirms that there was a variety in burial practice.

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[97] Ibid., p. 73.

[98] Oliver Lafarge, op. cit., p. 204.

> Sometimes the dead were placed on the open tundra not far from the village, together with some of the belongings of the deceased; in other places graves were made among the loose rocks, or the body was covered with a pile of driftwood.[99]

Lantis' description of a burial on the Bering Sea coast is also reported from Kodiak and the Aleutians, and so may have been practiced by Aglemiut also.

> The corpse was flexed, skins wrapped around it (in southwest Alaska, matting or skins and matting), and the bundle lashed. It was removed from the house through the smoke hole or some temporary hole made for this purpose, as soon as possible after death....The body was laid in a slightly excavated depression or on top of the ground... or on a low platform which might be only a few pieces of driftwood under the body. Stones or pieces of wood were piled over the body or sometimes laid around and over it more symmetrically in box form....[100]

This system is known as "cairn burial." In the Aleutians mummification and cave burial were practiced. Residents of Naknek also report this method. Taddy Monsen, John Lundgren, and others speak of a cave at the head of Iliuk Arm which can only be seen by boat. Skeletons and masks were found there, along with some other small artifacts. Eskimo residents warned them to stay away from that place, that it was bad to disturb such a place. Mike McCarlo believed that dead people can move around in the ground. According to a taped interview for the National Park Service, he believes that the dead person moves upward to just below the surface of the ground and that the humps visible on the surface of the graves are due to this upward movement.[101]

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[99] Hulley, op. cit., p. 20.

[100] Lantis, op. cit., p. 13.

A memorial feast in honor of recent dead is recorded from Kodiak and the Aleutian Islands by Lantis. Guests were feasted with all the food stores possessed by the family and all the deceased's goods were given away to the guests. This practice may have been common to Aglemiut as well.[102]

Sayings, Tales, and Recollections. Folklore in the Naknek area is a combination of practical science, shrewd observation, and superstition, with sayings reflecting all of these qualities.

"When the swallows come back before the robins this means a lot of fish."

"When there is a lot of snow in the winter this means a lot of black and blue berries."

"When the gulls drift high above the beach or the river bank this means the wind is going to blow."

Some short tales reflect the superstitions and fears of older days. One interesting aspect of these is the frequency with which they figure in the stories appearing as English essays or on other written work of a creative nature assigned to students. They often refer to the "mus-ka-la'-dux," or evil spirits. According to some, "They were very black and very short. You can almost see right through them." These spirits are like humans, only without any clothes, "and we believed if we walked closer than 50 feet toward them, we would turn into one of them ourselves."

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[101] Mike McCarlo, taped conversation for National Park Service, Region Four, submitted by L. S. Cressman, January 5, 1962.

[102] Lantis, *op. cit.*, p. 13.

> There is another story about two men they always see. There is one tall man and one short one. The short one always seems to be playing tag with the big one. But when one sees any humans they always disappear right where they are standing. If it is on the roof they seem to dive into it and disappear. Nobody has figured this out; they have tried to catch them but they never can because they always run like the wind, disappear like the wind.
>
> A woman was sitting down doing nothing, just resting, when two hands suddenly gripped her from behind. She did not know who it was or if it was nothing at all. When she turned around nobody was there.[103]

As in folklore about the American West, bears often are a feature in the stories from Alaska. The Naknek area is no different. The Alaska brown bear which roams the Alaska Peninsula fishing for salmon in the summer and eating berries in the late summer and fall is a large animal and not one to disturb. Stories of hand to hand combat with this largest carnivore on earth are heard occasionally. Usually the story involves a lucky hunter who survived but suffered horribly. One common element in the suffering is that the man's face seems to swell and get very puffy from the bear's hot breath. In one instance "the person looks just like somebody been beated up. Face is swelled up, eyes is closed."

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[103] These stories all come from various students in Naknek school 1964-1966.

Bears and people could change character with each other. The following story is of a woman who turned into a bear.

> There was a hunter, and he was a very good hunter. He always hunted over the mountains, but he always brought back plenty of food for his family. Other men did not go clear over the mountains to hunt. The man's wife asked him, sometimes, why he went so far over the mountains to hunt, and he always replied, "I go up the mountains to get the view." One day the hunter went up the mountain but did not come back. In a short time his family was in desperate shape. They had no food and were very hungry. The hunter's wife and children decided to follow him and see what had happened. They climbed up the mountain, and when they reached the top the woman could see, far below on the other side of the mountain, some barrabaries along the shore. There were boats coming in, carrying hunters, and on the shore there was a woman and a little baby. The woman's husband was in one of the boats, but when it was put ashore he was greeted by the lady and little baby on the shore and together they went into their house. The woman knew that her husband had taken another wife and would not come back to her and their children. So she turned herself into a bear, and when the hunters from the village left for another hunting trip she came down from the mountains and ate the woman and the little baby. When the husband returned he knew that it was his first wife who had done the deed, and that she knew of his infidelity. He tried to hunt her, and sent his friends out too, to find the bear and shoot her, but he never found her.[104]

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[104] Julie Ansaknok, in conversation.

Two men who were participants in the excitement of the Katmai eruption of 1912 have had their stories preserved. Though the tales are not legendary, they are a colorful account of the event as seen from the eyes of young boys. The first story is by Harry Kaiakokohok, a resident of Perryville when the story was recorded by a Mr. Tom Jessee.

> It was morning times. Sun was shining bright all over. Like fine weather all over. We childrens were playing on the beach. We don't think nothing. When BLA--LOOM! Like hell! We jump up and look at one another. Everybody say, "What's that is?" Then we look over there. Sky all full of lightnings. We don't see no lightnings before.
>
> Everybody of we childrens start hollering and laughing and hollering, "It is the mountain. The mountain is doing something. Let's go see the mountain!" And we start to run hard as we can. We don't run home. We run up the side of high hill. Everybody try to get to top of hill first. All hollering, "Let's go see the mountain!" One of the childrens was blind. He blind all the time. He can't see anything. But he running right by me, and he hollering louder than anybody, "Let's go see the mountain!" Then he fall down, and I help him up and put both his hands on my shoulders, hollering loud like nearly make me deaf, "Let's go see the mountain!"
>
> We get to top of hill and see sky get black all over, way we looking. All full of lightnings. We don't know what those lightnings are. We don't see no lightnings before. Then our parents start hollering for us to come to our barabaras, and we run back down the hill. That blind boy still holding onto my back.
>
> Everybody of grown peoples carrying water from creek. They say ashes going to fall in water so peoples can't drink it. Then it get dark like that, (holding open palm of hand about three inches from his nose). Three days it stay dark like night, (three days and nights). We in barabara. Can't go anywheres. All the time we have those lightnings. What are those lightnings?

> What make them?
>
> It get hot in those barabaras. We pull off all our clothes. We soak them in water and put them over our face. Those peoples who have mosses in their barabaras pour water over those mosses and put them over their nose and mouth so they can breathe. After while we open door and try to see out. All black, everywhere. A little bird fly into barabara. He can't see where he go. We childrens wash his eyes with water and he stay in barabara with us.
>
> After long time, about three days, it start to get light. Everybody go outside. That stuff all over, like deep snow. Couldn't even see the bay. Bay was like land. We childrens glad to get out of those barabara. We start to play in those dust. Have much fun! I tell you. We try to run and wrestle. Dust like cloud everywhere we move, boil up to face every time we take step. Hard to breathe. Holy!
>
> Then we see that boat coming up the bay (Coast Guard cutter, "Manning"). Gee! Was funny feeling. Boat was like coming across dry land. All those stuff was floating on the bay, about six feet deep. Dead whales and sea lions and salmons were all mixed up in those stuff floating on top of the bay. Then we leave there and come to this village, Perryville. First time, boat go to Ivanof Bay. Some of grown people don't like that Ivanof Bay. So boat turn around and bring us back here where we start this village named Perryville.[105]

The story told by George Kosbruk has some variations of detail due to his different circumstances at the time. The excerpt of his story preserved by Mr. Jessee is as follows:

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[105] Harry Kaiakokohok and George Kosbruk, cited by Tom Jessee, Rockport, Texas, in a letter to Dr. L. S. Cressman, Department of Anthropology, University of Oregon, Eugene, Oregon. No date. Letter on file in Headquarters of Katmai National Monument, King Salmon, Alaska.

> Me and my brother was out in boat when mountain exploded. We don't like that much. My brother, he look like he got worry on his face. He say, "We better go back to land." We start to leave, and them lightnings getting closer. Big rocks, red with hot, fall in bay all around boat. They fall right close to boat and go GLUB--Blubble--Blubble. We scared like hell, I tell you! We don't fool around much with that place. Go fast from there. Dark like night time when we land on beach.[106]

Mr. McCarlo, in his tape recording, also mentions the conflict between Naknek people and Savonoski people. Below is a transcription of the tape in the same colorful style in which Mr. McCarlo spoke.

> If you cut yourself out on the tundra, if you see a porcupine, in case if you see porcupine, if cut, you got a big cut, even deep, you get the porcupine right away, and kill it right away. And you cook the fat and put em in the cut, was a big cut you know--and that even two weeks, a cut about that big, he heal em up. Really pure clean too. Then you put it in the morning, and then you put another on in the evening. Everyday. Two times then just pure clean. There are all kinds of medicines. I had a big cut one time when I was sick, from steel like this uloo, bit split, big square one too, right in this place, about that big. Several times I was there all alone. I knew, see, some of the chunk of meat is out of someplace.
>
> The old ones used to hunt bear, that when hunt bear, the real hunters. Some kind of a, he cut the wood about that big, he cut three pieces--see--when he is going to hunt. Then he go out in evening, he go in the creek; when he meet the bear, he hit him two times, if he is near, second time he go after him, see. Then he got to take that. And if he don't meet, a third time he go after him. See sometime, if you hit him once, first one, he go after you, a mean one. See what I mean, the second time he go after you.

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[106] *Ibid.*

> Some guys over in the, they quit two or three years ago; two or three years ago in the Nushagak River, that old guy, he didn't use, he didn't fool around with the big guns. He use that. I don't know how he kill em. I see one he got a meat, something like a charcoal, a stick about that long...about 20 feet. So when the bear is old and rich, then he's got a handle, he got a handle by his hand so it wouldn't break then. Then a blade about that long...a foot and a half blade on it. And he watch it too. And the bear as soon as he comes, he kneel down like this see. He hold that stick, and he put that blade like this. So that bear wouldn't see that blade. He put that stick over here see. He is sitting down like this, you see. He watch it close too. Soon as he's right on top of him, he start to use that stick. He's standing up, then he grabbed that stick and put it over here. Puts it in his chest. Then he stand up. Then he stay too. Just hold in the stick. But when he quit, but when he gave up, the boy claims the person looks just like somebody been beated up. Face is swelled up, eyes is closed. I don't know why. But it take three or four hours to get all ready. Full of blood on his clothes. It is better than guns. You can't miss him. Lots of old guys they used to do that. Even my old man used to do that up on the Savonoski River. He didn't use no guns. He used bow and arrow. The first time when they see them guns, he didn't believe them. He used only bow and arrow...about that big. Pretty near that long. Oh that long. When he was young you know. Maybe look like outside, oh about that long...two and one half to three foot long. Just a short little bow. Arrows were just like arm, you know. Like this. Long arrow and short bow. Sure he could shoot far with it. In old times, could shoot. See. Make bow out of spruce, I think. Not bone, usually some kind of trees, birchwood.[107]

The following recollections of Mrs. Monsen come from a conversation June 5, 1966. A taped interview was made July 9, 1966 and covers essentially the same material. This tape, and one made of a conversation with John Lundgren are available from the writer. Mrs. Monsen came to Bristol Bay in 1912.

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[107] McCarlo, op. cit.

She arrived just two months after Katmai volcano spewed 40 times the dirt excavated from the Panama Canal all over the Alaska Peninsula. She was not afraid of volcanoes however, because she came to Naknek from the Aleutian Island of Akutan which has a volcano of its own. She says, "It spews smoke and rocks and lava all the time. And we used to see others too."

When she first came to Naknek there were only three houses as we know them in the village. There were several canneries, but the village of Naknek was located between what is now Red Salmon Cannery and the Nornek Cannery. Nornek was not here at the time, but was built several years later. The natives who spent their summers here lived in barrabaries much like those of the Aleuts she had known down on the chain. Their houses, however, were more primitive. The entry way was so low that one had to bend way over to get into the house. Inside the floor was covered with straw, the dried native beach grass. The walls were lined with wood salvaged from the canneries or the beach. The outside of the house was covered with sod and mud, and the interior was excavated so that mostly just the roof was above the ground.

> The people who came just for the summer lived in tents near what is now the town dump just east of Nornek Cannery. These natives spent the summer hunting seals, catching, splitting and drying fish and occasionally salting them.

They used "bidarkiis" like the Aleuts. These boats were covered with sea-lion hide and sewn with the special native stitch which is water-proof. They had one, two, and sometimes three holed bidarkiis.

They wore fur parkas, summer and winter. Their only other clothing consisted of mukluks which they had for both winter and summer. They had rain gear made from the intestines of bears and seals or sea-lions. This outer garment was the familiar kamlyka that was worn by peoples all up and down the Alaska Peninsula and the Aleutian chain, Kodiak Island, and even to Prince William Sound.

They made grass baskets, but not as fine ones as they made on down the chain. The Aleuts made them better. The baskets from this area were like the ones still made around Bethel and the Kuskokwim Delta. The ones from Atka and Attu were the very best. They were made from a different kind of grass which was dried carefully so that it did not become brittle, and then was split with a thumb nail into pliant strips which could be truly woven. Many of the baskets made now are sewn. The short strands of dried grass were rolled into each other as they were woven. They were melded into one another much like wool yarn pieces can be rolled together to make a longer piece. Thus there is no place in an Aleut basket where you can see that one strand of the grass begins or ends. It looks as if it were made of one piece.

Mrs. Monsen still has some woven grass work that her mother made. It covers a liquor bottle and is exceedingly fine work. Intricate patterns and designs are woven into the work and the whole thing fits the bottle like a second skin. Other baskets that were made by her mother are still in existence, but they are not in the area and belong to people who live in Southeastern Alaska or other places. The baskets, and occasionally the intestine parkas, were dyed in various ways.

Gall from the cuttlefish was saved and either dried or bottled. This made a fine blue dye. Different colors were used to weave different designs into the baskets. Forget-me-nots, roses, and geometric designs were woven into the various pieces according to the taste of the weaver.

In the summer of 1919 an epidemic of flu hit the village and everyone in the native area died. Only four families who were down the coast some little way hunting seals were spared. Everyone else died. Many natives from up by Libbyville came down for the summer and as soon as they arrived they got sick too. The four sisters and their families who were down the coast were warned not to come back to the village because of the sickness and they were brought supplies by Mr. Monsen, who sent them down in a cannery tug. Men would try to go out fishing and would come back, beach their boats and collapse on all fours on the beach. They could not even walk but would crawl until help came. Many were buried in the cemetery by the Russian Orthodox Church. People crawled through the grass near my house which had a fence around it. I had been warned by the cannery doctor not to have anything to do with the sick people, especially as I was pregnant that summer. But there was water at our house and the natives had none. They would come and knock on the fence and lay in the grass until I came to the door. When they requested water I would tell them to put a bucket down and they would leave it by the fence, retreat, and then I would go out, get the bucket, fill it with water, and then put it back outside by the fence where it would be claimed by the sick.

Occasionally she would carry it to their houses because they were too sick to carry it themselves, but she was reprimanded by the doctor. She pitied the people, but there was not much she could do about it. All the natives who came to the summer camp died there that terrible summer. It was an especially hot summer, she recalls.

People died so fast during the epidemic that trenches were dug in the cemetery and as many as eight people were buried at once in a common grave. Most of the markers in the cemetery are from that one disastrous summer.

There was no apparent connection between the Aleut language and the Eskimo dialect that she heard in Naknek. She was laughed at by the natives when she tried to make change in the cannery store managed by her husband. A native lady tried to pay for something, but Mrs. Monsen could not make her understand about the price, so the women were at an impasse until her husband came and straightened the matter out. The lady laughed and told Mr. Monsen to tell his wife to "hurry up," meaning "hurry up and learn the language."

> King Salmon was built during the war and was entirely a military operation. Before that there were only a few trappers' cabins in that area, and there had been a reindeer herd just up the river a short way from there.
>
> Old Savanoski, up the Savanoski River, was evacuated because of the volcano and most of the buildings fell in because their roofs were weighted down by the ashes from the explosion. There were not many mud huts there, but it was a permanent settlement, not just a summer one. People who lived there mostly fished and hunted and got their living from the land.
>
> There were many sea-lions and seals that were hunted in Bristol Bay. Bears and moose and caribou were hunted too, and whales were used when they were found, though it was rare, except for belugas. Now the people hunt them occasionally just for one to eat, much as pheasants are hunted in other states.
>
> There were some trappers' cabins up on Smelt Creek, but they belonged to single men. They died and some married couples moved in but they are gone now too.

CHAPTER V

SUGGESTED PROCEDURES

It must be stressed that the purpose of learning about old ways is never to keep students harnessed into old ways. It must always be pointed out to the students that this knowledge is for the sake of interest and pride, but the present and future years will make demands which are radically different from those made upon parents or grandparents. The most aggressively adaptable people, who are flexible enough to retain the best wisdom from their heritage, and yet willing to try new ways of doing things and experiment with new forms of social structure and personal life, will have the best chance of dealing with the culture that is emerging in Bristol Bay.

Overall Goals. The materials presented thus far may become the basis for a class in "Cultural Backgrounds in Bristol Bay Borough." Goals for this class have been discussed in Chapter One. Briefly they may be summarized as follows:

1. Increased understanding and appreciation for the culture indigenous to Bristol Bay.
2. Increased knowledge of facts about the indigenous culture.

3. Psychological undergirding of pride in cultural heritage.
4. Increased ability to make wise choices in adapting to emerging cultural patterns.
5. Increased ability to understand and appreciate other cultures.
6. Increased ability on the part of both teacher and student to communicate with one another.

The content of the class material should include units on geography, history, anthropology, archaeology, language, and folklore.

Course Outline. It is believed that each of the major divisions which follows will be of interest to the students. For example, they have lived more intimately with the physical environments of coastlines and tundra than any teacher. Yet their scholarly knowledge is limited. They like to learn about their own region. It could be simple fun for them to discover details about tides, tundra and plants which they have used in practical ways all their lives. It would also be rewarding for the teacher to gain some of the insights about the area which could be shared by students. The entire class should be an opportunity for the teacher, as well as his students, to compile new material and information about Bristol Bay.

I. Location and Physical Environment
    A. Mountains
    B. Lakes
    C. Coastlines and Tides
    D. Permafrost
    E. Tundra (Flora)
    F. Glaciation
    G. Volcanism
    H. Climate
    I. Fauna
II. History
    A. Eskimo Origins
    B. Bristol Bay Settlement
    C. Russian Exploration
    D. English Exploration
    E. Other Contacts
    F. History and Significance of Salmon
        1. Aboriginal Salmon Use and Attitudes
        2. Commercial Fisheries
    G. Community Development
III. Aglemiut-Aleut Culture
    A. Scope of Anthropology
    B. Influence on Other Culture Areas
    C. Salmon as a Food Staple

D. Hunting

E. Plants

F. Material Culture

G. Eskimo and Aleut Language

  1. Glottochronology

  2. Vocabulary and Pronunciation

H. Social Structure

I. Religion, Ceremonies, Burial Customs

J. Sayings, Tales, Recollections

Suggested Activities. Activity opportunities to make the class appealing and to create interest and appreciation for the cultural heritage of Bristol Bay are limited only by the creative concern of the teacher. Some suggested activities are listed below. Any or all of them may be used according to the abilities of students and teachers. It is intended that this list be only a stimulus which could initiate creative ideas from teachers.

1. Personal Interviews

   Visit the local residents who have special knowledge; write up anecdotes, historical incidents, folklore.

2. Field Trips

   Visit village sites.

3. Craft Activities

Make ground slate tools, projectile points, knives. Work in bone to make awls, fish hooks, needles, knives. Tan small hides of rabbit, lemming, "parky" squirrels. Build a bidarki, either a model or a full size craft.

4. Utilize Resource People.

   Ask residents to visit class to discuss their areas of expertise or go along on field trips.

5. Make a Museum of Artifacts.

   There are several people who have examples of old crafts, artifacts, and historical documents and items that are suitable for display. Because they are dispersed throughout the community they have little impact. But a display case (even a discarded case from the local store, or one made especially for the purpose at the school shop) could be established in a hallway at the school, and the material collected could have a decided impact on native pride and concern for their heritage. Credit could be given to the owners of the items by means of a little card printed in art class. Many people would be willing to display their things if they could be certain that great care would be taken in establishing the display, giving proper credit, and returning of items intact was assured. This could be a source of pride and interest for the entire community.

6. Library

Another simple project would be to set aside a special area in the school library that is reserved for good books about Alaska history, culture, geography, art, anthropology or whatever. This could be developed without too great expense into a valuable area for study. The Anthropological Papers of the University of Alaska, for example, are inexpensive, interesting, and a good resource for special projects. All those in print at present can be purchased for under $80.00. They contain scholarly articles and are often quite technical in nature, but for anyone interested they are a rich source of information, and are not as formidable as they sound. The standard Alaska histories like Bancroft's belong there, as do specialized books like Grigg's _Valley of Ten Thousand Smokes_ or Dorothy Jean Ray's _Artists of the Tundra and the Sea_. Many of the really fine books about Alaska such as the Annual Reports to the Bureau of Ethnology of the Smithsonian

Institute, are now out of print or difficult to get. This section could be built up slowly without an undue burden on the budget. Two hundred dollars per year would provide a valuable collection in a short time. Local residents could share in this project by donating or lending books to the library for this purpose.

Resource People in Bristol Bay. Mike McCarlo or Paul Chukan could be invited to describe the location of village sites.

Paul Chukan or Nick Holstrum can discuss family and village relationships, religion, history, folklore. Max Gottschalk can contribute stories, history, customs.

Emil Anderson and Tony Malone can explain trapping procedures; Paul Chukan and Charlie Wilson can discuss sea mammal hunting both historically and in the present.

Anisha McCormick knows the local dialect very well. Donna Gottschalk is familiar with northern Eskimo dialects, and Evdokia Ansaknok and Nick Holstrum know Aleut.

Darrell Coe, a teacher and former Katmai National Monument Ranger, knows the geography, fauna, and flora of the region, and is familiar with the archaeological work in the Katmai area.

The staff personnel of Katmai National Monument, the

Weather Bureau, Alaska Department of Fish and Game, and the Federal Fish and Wildlife Service all have information to share about the area.

Suggested lesson plans and some presuppositions underlying them are given. Major goals and immediate goals are included as well as procedures for the class period. The unit described covers a two week period at the beginning of the history portion of the class, and is not to be considered as the complete program. Materials that are suggested are available in the area.

Lesson Plan Presuppositions.

1. Class size is about 10. This is realistic for the kinds of schools in which this program would be used.

2. The teacher should have established good rapport with the students. There must be an atmosphere of mutual appreciation, trust, ease, security.

3. The class is composed of mixed native and non-native students.

4. The goals of the class do not include a certain amount of material, such as a textbook, which must be covered by the end of the time allotted. Rather, the goal is for a mutual sharing of ideas, activities, and information.

5. Grades are not important, nor an end to be achieved. Credit for the class is given to those who complete the work

required and participate in the activities, but only on a pass-fail basis.

6. It must be recognized by both teacher and student that there are no "experts" in this field. Too much research remains to be done, too much information is still hidden to qualify anyone for definite opinions except as he takes into consideration the whole discussion pro and con for his position. Knowledge, then, consists of awareness of the arguments for and against the ideas that are currently held.

7. Materials must be found by the teacher and the students. They are not readily available in the "supply room" of any school. The limit of resource material will depend to a large extent upon the perseverance and creativity of the teacher.

Introduction to Lesson Plans. These are samples only and cover only two weeks. They are not complete units but merely suggestions of the form for part of a unit. The teacher should adapt, reconstruct, revise, refine or reject according to ability and inclination. It should also be noted that the major goals are for an entire unit and thus do not change each day. It is assumed that each day's lesson plans will work toward the major goal.

Monday

Major Goal: Increased knowledge of facts about native culture.

Immediate Purpose: To introduce the class to the history of Bristol Bay.

Special Materials: Have a group of books available. This should include the following:

History of Alaska, Bancroft
Chugach Prehistory, DeLaguna
Pre-historic Cultural Waves from Asia to America, Jenness
Igloo Tales, Keithan
A Pictorial History of the American Indian, Lafarge
Indian and Eskimo Artifacts of North America, Miles
Artists of the Tundra and the Sea, Ray
Ancient Culture of the Bering Sea and the Eskimo Problem, Rudenko
Indians of the Americas, Sterling
Anthropological Papers of the University of Alaska
Indians of North America, Driver
The Native Americans, Spencer

Also have a display of artifacts from the village sites in the area. This would include projectile points, bone and slate tools, knives, pottery, basketry, ceremonial and art objects.

Procedures:

1. Show and explain the artifacts, limiting the handling of items to projectile points which are easy to pass around the room and not especially breakable. One of the local residents could be prevailed upon to do this. Students, the teacher, and the guest could all bring artifacts to show.

2. Describe the manner in which an archaeologist works and what he looks for. Use question-answer type discussion to elicit responses. Raise the question of where

people came from; trace the development of mankind from Cro-Magnon through pre-historic civilizations in the great river valleys. Tie this in with the great movements of men across the earth and the particular movement that brought men to America during the Wisconsin Ice Age. Draw out questions and answers about the way in which we know these things, and how archaeologists and anthropologists can estimate times and places.

3. Make assignments. Assign student reports on the following subjects:

A. Purposes and Methods of Archaeology
B. Relatives of the Eskimo
C. The Problem of Eskimo Origins
D. Stone-Age People and How They Lived

Assign the other students a general reading and browsing through the books that are available to familiarize themselves with the materials.

Tuesday

Major Goal: Increased knowledge of facts about native culture, increased appreciation for the achievements of native artisans.

Immediate Purpose: To give students a sense of the magnitude of the difficulties of survival under Arctic conditions with only stone-age equipment. To develop pride in the native heritage of adaptability to environment.

Special Materials: Have available the following:

1. Flints
2. Hard rocks for sparkers
3. Tinder
4. Thin sections of slate
5. Beach rocks to use for grinding the slate

Procedures:

1. Gather class around center of room and strike a spark with flint and rocks. Catch spark in tinder. Blow in tinder until it ignites in the hands and then extinguish in palm. Let the students try it. Point out the difficulty faced by neo-lithic men who had to try this outdoors in wind, rain, snow. Point out how necessary the fire might be to a family to keep away the cold after a hard day of travel.

2. Demonstrate how the ancients used a beach rock and slate to make ground slate projectile points and tools. Point out how perfectly symmetrical and finely finished the artifacts are that are on display. Grind on the slate for a while, and have all the students try it with their own equipment. Point out how difficult it is to make the slate symmetrical. Ask how they might have made a finer finish on the point, and show how oil from animals that have been

killed might produce a finer finish.

3. Using *Artists of the Tundra and the Sea* show the class the ways in which ancient Eskimos decorated their weapons, tools, pottery, and hunting implements.

4. Hear report A and discuss what the student has reported. Allow time for questions and discussion.

Wednesday

Major Goal: Increased knowledge of facts about native culture.

Immediate Purpose: To put some concrete facts before the class to reinforce the impressions made by the previous day's experiments.

Special Materials: None beyond those already available in the room.

Procedures:

1. Hear reports D, C, B in that order. Allow time for discussion. Point out the findings from the archaeological investigations made along the Naknek River and list the various culture phases indicated by the findings.

2. Explain the role of the linguist in tracing the history and development of people and raise the question of how a knowledge of linguistics might be valuable in the study of people of Bristol Bay. What could a knowledge of languages tell us about this area?

Thursday

Major Goal: Increased knowledge of facts about native culture.

Immediate Purpose: To explore the development of the people of this area into distinct groups with particular languages, and cultural adaptations.

Special Materials: Nothing new.

Procedures:

1. Discuss the idea raised at the close of class Wednesday. Linguistics, through a system known as glottochronology, can help determine when people who belong to a common language group broke off from the parent tongue and developed a distinct dialect of their own. Show how this works out with our knowledge of the break between Eskimo and Aleut peoples.

2. Raise the question of what makes the people of our particular area unique. How are we different from people elsewhere? What are the effects of environment upon our way of life? Does this contribute to our uniqueness? How did our environment make survival difficult? How did it help make survival easier?

3. Lecture (15 minutes). Point out the anthropological definitions and distinctions between cultural areas of Alaska. Show how our area is defined and use a large wall map to describe the limits of our area. It may be that a teacher will feel this area of discussion should come earlier in the unit, perhaps at the very beginning. It is assumed

that the teacher would feel free to change this sequence, using this as motivation, and then focusing on the local area.

Friday

Major Goal: Increased understanding and appreciation of native culture.

Immediate Purpose: To tie up any loose ends of the week's discussions and activities, and clear up any questions or misconceptions that may persist. Summarize the week's work, and prepare the class for next week.

Procedures:

1. Review discussion to recount salient points of information and elicit questions that may puzzle students about any particular area.

2. Use A Pictorial History of the American Indian to quickly sketch through pictures the development of Eskimo civilization in North America.

3. Raise questions about the adaptability of prehistoric peoples to their environment. Try to draw out the fact that these people had to be highly adaptable in order to survive. Can we adapt by preserving part of the past? Or without the past? Does it help us to see the future more clearly if we understand the past? How? What guidelines may we use that have been given us by the ancient people of Alaska?

It may be felt that Friday would be a good day for a test. Students could propose the questions, and the whole class attempt to answer a given number from the total selected.

4. Warn the class to wear old boots or shoes, and to bring old clothes Monday for a field trip to the Pavik site to sift for projectile points.

Suggested Lesson Plans, Second Week

Monday

Major Goal: Increased understanding and appreciation for native culture.

Immediate Purpose: To investigate the Pavik village site to see what can be learned about the way in which the previous inhabitants lived.

Special Materials: None necessary so long as everyone is dressed in old clothes.

Procedures:

1. Discuss what the class can expect to find, what to look for, before going to the site. Discussion at the site can then be used for reinforcement of learning. Walk to the site and examine the area as a whole. Point out the holes in the ground that mark the "barrabaries" or houses where people lived. Describe the way in which they were built and the reasons for building them in their unique fashion. Raise questions about the location. Why was it located here? Where did these people get their food? Water? What special

materials are available here to make life easier for people? What would be the drawbacks to this site?

2. Describe the archaeological work that has been done here and the results. What are the speculations that have been made and what is the basis for them? Show the class the way in which preliminary investigations of the barrabaries was conducted.

3. Scale the river bank and sift through the sand and gravel for evidences of human habitation or use. Point out the difference between this method of looking for artifacts and the archaeological method of looking for relationships.

4. Return to school.

Tuesday

Major Goal: To increase knowledge of the facts about native culture.

Immediate Purpose: To organize and reinforce the learning from Monday's experience.

Procedures:

1. Discuss the events of the preceding day, and display any artifacts that were found. Answer any questions.

2. Introduce the class to Darrel Coe, Katmai National Monument Ranger, who can show slides of the work contracted by the Park Service. The results of the archaeological investigations made in the park have not yet been finalized, but an interim report has been filed and many pictures have

been taken of the work as it was in progress.

3. Slide lecture by Mr. Coe. Time for discussion.

Wednesday

Major Goal: Increased knowledge of facts about native culture; increased appreciation for the accomplishment of prehistoric man in this area.

Immediate Purpose: To draw this unit on Pre-Russian history to a close and test the ability of the class to express their ideas and feelings about this part of their history.

Procedures:

1. Briefly summarize the attempts that have been made to acquaint ourselves with the pre-history of the area.

2. Assign a paper, using any of the materials that are in the room, on one of these three topics (choice of topic is up to student).

   A. My community in 1700.
   B. How environment affected Eskimos in Bristol Bay.
   C. Difficulties encountered by our Neo-lithic ancestors.

3. Allow the remainder of the period for the work on the paper. If it is necessary to take the paper home and finish it, that is all right. The papers then must be handed

in at the beginning of class on Thursday.

Thursday

Major Goal: Increased knowledge of facts about the history of Bristol Bay.

Immediate Purpose: Introduce the short unit on early European exploration of the area.

Procedures:

1. Raise questions about who discovered the bay, the motives of the early explorers, their equipment, characteristics, and attitudes. Point out the books that are most apt to have this kind of information in them. Add the following books to the resource shelf:

The State of Alaska, Gruening
The Valley of Ten Thousand Smokes, Griggs
Alaska: Past and Present, Hulley
Little Journeys into the History of Russian America and the Purchase of Alaska, Shields

2. Outline the major explorers and assign biographical sketches of Baranof, James Cook, and Korasakovsky. Assign general reading in the area to the rest of the class. Read to find out what achievements were gained by the early explorers. Allow time for this reading.

Friday

Major Goal: Increased knowledge of the facts of Bristol Bay history.

Immediate Purpose: To discover more about the nature of the early explorers and the developments that arose from their intrusions.

Procedures:

1. Hear the reports about James Cook and Baranof. Allow time for questions and discussion. Using the biographical material in the reports as a springboard, trace the influence of the Russian and English explorers upon the native population and the environment. This should take the rest of the period, and would include a discussion of the depredations of Russian fur traders, the uprising of the Aleuts, the decline of the sea-otter, the coming of the Russian missionaries, and the reaction of the people to the Russians.

2. Assignment for Monday: Who was Veniaminov?

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APPENDICES

APPENDIX A

A PARTIAL LIST OF ANIMALS, PLANTS, AND INSECTS OF THE NAKNEK DRAINAGE*

MAMMALS

1. Alaska Moose (Alces gigas)
2. Aleutian ground squirrel (Citellus parryii ablusus)
3. Bat (Chiroptera)
4. Beaver (Castor canadensis)
5. Grant Caribou (Rangifer caribou granti)
6. Hoary Marmot (Marmota caligata)
7. Interior Alaskan Wolf (Canis lupus pambasileus)
8. Lemming (Lemmus)
9. Lemming mouse (Synaptomys)
10. Lynx (Lynx canadensis)
11. Meadow Mouse (Microtus and Clethrionomys)
12. Mink (Mustela vison)
13. Otter (Lutra canadensis)
14. Pacific Harbor Seal (phoco richardii)
15. Peninsula Brown Bear (Urus gigas)
16. Pygmy Shrew (Microsorex)
17. Red Fox (Vulpes fulva)
18. Red Squirrel (Tamiasciurus hudsonicus)
19. Reindeer (Rangifer tarandus)
20. Sea Otter (enhydra Lutris)
21. Shrew (Sorex)
22. Whales and Porpoises (Cetacea)
23. Wolverine (Gulo luscus)

BIRDS

1. Alaska Hermit Thrush (Hylocichla guttata guttata)
2. Alaska Jay (Perisoreus canadensis fumifrons)
3. Alaska Longspur (Calcarius lapponicus alascensis)
4. Alaska Spruce Grouse (Canachites canadensis osgoodi)
5. Aleutian Song Sparrow (Melospiza melodia sanaka)
6. American Magpie (Pica pica hudsonia)

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*Victor H. Cahalane, _A Biological Survey of Katmai National Monument_, (Smithsonian Miscellaneous Collections, Vol. 138, No. 5, August 20, 1959).

BIRDS (continued)

7. American Pipit (Anthus spinoletta rubescens)
8. American Rough-legged Hawk (Buteo lagopus s. johannis)
9. American Scoter (Oidemia americana)
10. Arctic Tern (Sterna paradisaea)
11. Baird's Sandpiper (Pisobia bairdi)
12. Bank Swallow (Riparia riparia riparia)
13. Barrow's Golden-Eye (Glaucionetta islandica)
14. Black Brant (Branta nigricans)
15. Black Oyster-catcher (Haematopus bachmani)
16. Black Turnstone (Arenaria melanocephala)
17. Bonaparte's Gill (Larus philadelphia)
18. Buffle-head (Chritonetta albeola)
19. Calaveras Warbler (Vermivora ruficapilla ridgwayi)
20. Canada Goose (Branta canadensis)
21. Clark's Nutcracker (Nucifraga columbiana)
22. Common Mallard (Anas platychynchos platychynchos)
23. Coot (Fulica americana americana)
24. Cowbird (Molothrus ater)
25. Eastern Robin (Turdus migratorius migratorius)
26. Eastern Snow Bunting (Plectrophenax nivalis nivalis)
27. Gambel's Sparrow (Zonotrichia leucophrys gambeli)
28. Glaucous-winged Gull (Larus glaucescens)
29. Golden-crowned Sparrow (Zonotrichia coronata)
30. Golden Eagle (Aquila chrysaetos canadensis)
31. Great Gray Owl (Scotiaptex nebulosa nebulosa)
32. Greater Scaup Duck (Nyroca marila)
33. Greater Yellow-legs (Totanus melanoleucus)
34. Green-winged teal (Netlion carolinense)
35. Herring Gull (Larus argentatus)
36. Holboell's Grebe (Colymbus grisegena holboelli)
37. Horned Owl (Bubo virginianus)
38. Kodiak Pine Grosbeak (Pinicola enucleator flammula)
39. Least Sandpiper (Pisobia minutilla)
40. Marbled Murrelet (Brachyramphus marmoratus)
41. Marsh Hawk (Circus Hudsonius)
42. Myrtle Warbler (Dendroica coronata)
43. Northern Bald Eagle (Haliaeetus leucocephalus alascannus)
44. Northern Phalarope (Lobipes lobatus)
45. Northern Raven (crovus corax pincipalis)
46. Northern Varied Thrush (Ixoreus naevius meruloides)
47. Northwestern Shrike (Lanius borealis invictus)
48. Olive-sided Flycatcher (Nuttallornis mesoleucus)
49. Osprey (Pandion haliaetus carolinensis)
50. Pacific Golden Plover (Pluvialis dominica fulva)
51. Pacific Kittiwake (Rissa tridactyla pollicaris)

BIRDS (continued)

52. Pied-bill Grebe (Podilymbus podiceps podiceps)
53. Pigeon Guillemot (Cepphus columba)
54. Pilcolated Warbler (Wilsonia pusilla pileolata)
55. Red-breasted merganser (Mergus serrator)
56. Redhead (Nyroca americana)
57. Red-throated Loon (Gavia Stellata)
58. Rock Ptarmigan (Lagopus rupestris)
59. Rosy Finch (Leucosticte)
60. Ruddy Duck (Erismatura jamaicensis rubida)
61. Rusty Blackbird (Euphagus carolinus)
62. Savannah Sparrow (Passerculus sandwichensis)
63. Screech Owl (Otus Asio)
64. Semipalmated Plover (Charadrius semipalmatus)
65. Sharp-shinned Hawk (Accipiter velox velox)
66. Short-billed Gull (Larus canus brachyrhynchus)
67. Slate-colored Junco (Junco hyemalis hyemalis)
68. Spotted Sandpiper (Actitis macularia)
69. Tufted Puffin (Lunda cirrhata)
70. Volet-green Swallow (Tachycineta thalassina lepida)
71. Western Belted Kingfisher (Megaceryle alcyon caurina)
72. Western Flycatcher (Empidonax difficilis difficilis)
73. Western Golden-crowned Kinglet (Regulus satrapa olivaceus)
74. Western Grebe (Aechmophorus occidentalis)
75. Western Harlequin Duck (Histrionicus histrionicus pacificus)
76. Western Tree Sparrow (Spizella arborea ochracea)
77. Whistling Swan (Cygnus columbianus)
78. White-crested Cormorant (Phalacrocorax auritus cincinatus)
79. White-fronted Goose (Anser albifrons albifrons)
80. White-winged Scoter (Melanitta deglandi)
81. White-winged Crossbill (Loia leucoptera)
82. Willow Ptarmigan (Lagopus lagopus albus)
83. Willow Thrush (Hylocichla fuscescens salicicola)
84. Wilson's Snipe (Capella delicata)
85. Yukon Chicadee (Penthestes atricapillus turneri)

FISH

1. Arctic Grayling (Thymallus signifer)
2. Dolly Varden Char (Salvelinus Alpinus)
3. Fine-scaled Sucker (Casostomus)
4. Northern Pike (Esox Lucius)
5. Pacific Lamprey (Entosphenus tridentatus)
6. Salmon (Oncorhynchus)

FISH (continued)

6. Salmon (continued)
   - Chinook or Silver
   - Chum or Dog
   - King Salmon
   - Pink or Humpback
   - Sockeye or Red
7. Steelhead or rainbow trout (Salmo gairdnerii)
8. Three-spined Stickleback (Gasterosteus acubeatus)
9. Whitefish (Prosopium)

PLANTS

The number of families of flowering plants in this collection is 39, in addition to 3 families of ferns and fern allies. 102 genera and 154 species of plants are known.

The eight families having the largest number of species are:

Composite - 15
Sedge - 15
Grass - 13
Rose - 12
Heath - 7
Fern, Eveningrose, and Figwort families - 5 each

Pteridophyta

- Club-Moss family (Lysopodiaceae)
  - Running Club-Moss
- Fern family (Polypodiaceae)
  - Fern (Gtmnocarpium dryopteris)
  - Fragile Fern (Cystopteris fragilis)
  - Lady-fern (Athyrium filix femina)
  - Long Beech-fern (Thelypteris phegopteris)
  - Wood-fern (dryopteris austricaca)
- Horsetail family (Equisetaceae)
  - Common horsetail (Equisetum arvense)
  - Water horsetail (Equisetum fluviatile)

Spermatophyta

- Arrow-grass family (Juncaginaceae)
  - Seaside Arrow-grass (Triglochin maritima)
- Bluebell family (Campanulaceae)
  - Harebell (Campanula rotundifolia)
  - Mountain Harebell (Campanulaceae)

PLANTS (continued)

Spermatophyta (continued)
  Buckwheat family (Polygonaceae)
    Bistort (Bistorta viviparum) Leaves may be boiled and eaten; they are rich in vitamin C and pro-vitamin A. The starchy root is edible raw but is usually boiled.
    Great Western Dock (Rumex fenestratus) Young plants can be cooked for greens.
    Koenigia (Koenigia islandica)
    Mountain Sorrel (Oxyria digyna) The leaves, eaten raw, are a good source of Vitamin C.
  Composite family (Compositae)
    Arctic Daisy (Chrysanthemum arcticum)
    Arctic Wormwood (Artemisia arctica)
    Arnica (Arnica chamissonis)
    Artemisia tilesii gormani. The fresh or dried leaves are used as a poultice for eye conditions.
    Everlasting (Antennaria alaskana)
    Fleabane (Erigeron perigrinus)
    Marsh-fleabane (Senecio congestus)
    Northern Goldenrod (Solidago multiradiata)
    Northern Yarrow (Achillea borealis)
    Rattlesnake Root (Prenanthes alata)
    Squaw-weed (Senecio lugens)
  Crowberry family (Empetraceae)
    Crowberry (Empetrum nigrum) Although the raw berries are mealy and tasteless, they are more flavorsome when cooked. They are good as pie and jelly. The natives mix the raw berries with other fruit, especially blueberries.
  Crowfoot family (Ranunculaceae)
    Delphinium-leaved Aconite (Aconitum delphiniflorum)
    Larkspur (Delphinium glaucum)
    Narcissus-flowered Anemone (Anemone narcissiflora) The early spring growth on upper end of root is edible; it has a waxy, mealy texture and taste.
    White Water-Crowfoot (Ranunculus trichophyllus)
  Dispensia family (Dispensiaceae)
    Dispensia (Dispensia lapponica obovata)
  Dogwood Family (Cornaceae)
  Evening Primrose family (Onagraceae)
    Dwarf Fireweed (Epilobium latifolium) The young shoots are edible as greens, especially when mixed with other species.
    Fern (Epilobium angustifolium spectabile) The young plants are edible as a pot-herb; they are a good source of vitamin C and pro-vitamin A.

PLANTS (continued)

Spermatophyta (continued)

- Evening Primrose family (continued)
  - Fireweed (Epilobium angustifolium)
  - Glandular Willow-herb (Epilobium glandulosum)
  - Hornemann Willow-herb (Epilobium hornemannii)
- Figwort family (Scrophulariaceae)
  - American Brooklime (Veronica americana)
  - Monkey-flower (Mimulus guttatus)
  - Lagotis glauca
  - Painted-cup (Castilleja hyetophila)
  - Yellow-rattle (Rhinanthus minor grownlandicus)
- Gentian family (Gentianaceae)
  - Buckbean (Menyanthes trifoliata)
  - Four-parted Gentian (Gentiana propinqua)
- Geranium family (Geraniaceae)
  - Northern Geranium (Geranium erianthum)
- Grass family (Gramineae)
  - Arctagrostis (Arctagrostis latifolia)
  - Beach Tyegrass (Elymus mollis)
  - Bluejoint (Calamagrostis canadensis)
  - Bog Bluegrass (Poe paucispicula)
  - Downy Oat-grass (Trisetum spicatum)
  - Hispid Bluegrass (Poa hispidula)
  - Kentucky Bluegrass (poa pratensis)
  - Red Bent-grass (Agrostis borealis)
  - Red Fescue (Festuca rubra)
  - Reed-grass (Calamagrostis deschampsioides)
  - Ticklegrass (Agrostis scabra)
  - Tufted Hair-grass (Deschampsia caespitosa)
  - Water Hair-grass (Catabrosa aquatica)
- Hazel family (Corylaceae)
  - Dwarf Alpine Birch (Betula nana)
  - Green Alder (Alnus crispa)
  - Green Alder (Alnus sinuata)
  - Kenai Birch (Betula kenaica)
- Heath family (Ericaceae)
  - Alpine Azalea (Loiseleuria procumbens)
  - Alpine Bearberry (Arctostaphylos alpina) The berries are edible but usually too scattered to be worth gathering. Insipid when raw but much more flavorsome when cooked.
  - Bilberry (Vaccinium ovalifolium) Berries are edible either raw or cooked; they are a fair source of Vitamin C.

PLANTS (continued)

- Spermatophyta (continued)
  - Heath family (continued)
    - Bog Blueberry (Vaccinium eliginosum) Berries are edible either raw or cooked. They are a fair source of vitamin C.
    - Mountain Cranberry (Vaccinium vitis-idaea) The berries are good as sauce and jelly; can be stored under water without cooking. In the raw stage, the berries are acid.
    - Narrow-leaved Labrador Tea (Ledum palustris decumbens) The leaves make a palatable tea, but in too large amounts it may be cathartic.
  - Honeysuckle family (Caprifoliaceae)
    - Mooseberry (Viburnum edule) Used for a tart jelly.
    - Red-berried Elder (Sambucus racemosa pubescens) The berries are commonly believed to be inedible and to cause digestive disturbances.
  - Iris family (Iridacea)
    - Wilk Iris (Iris setosa)
  - Lily family (Liliaceae)
    - American White Hellebore (Veratrum eschscholtzii) Contains toxic alkaloids and should not be eaten.
    - Cucumber-root (Streptopus amplexifolius) Has sweet edible fruits. The young tender shoots have a cucumber-like flavor and may be eaten raw.
    - Indian rice (Fritillaria camtchatcensis) Bulblets are edible fresh or dried. The liquid resulting from fermentation is intoxicating.
    - Northern Asphodel (Topfieldia coccinea)
  - Madder family (Rubiaceae)
    - Bedstraw (Galium trifidum columbianum)
    - Northern Bedstraw (Galium boreale)
  - Mustard family (Cruciferae)
    - Kamchatke Rock-cress (Arabis lyrata kamchatica) Leaves are edible either green or cooked.
    - Marsh Yellow-cress (Radicula clavata)
    - Wormseed-Mustard (Erysimum cheiranthoides)
  - Orpine family (Crassulaceae)
    - Roseroot (Sedum roseum integrifolium) Fleshy stems and leaves are edible either green or cooked. The root also may be eaten.
  - Parsley family (Umbelliberae)
    - Cow Parsnip (Heracleum lanatum) A pot herb. The inner pulp of young stems and leaf-stalks is edible in the raw state. The root, when cooked, is said to taste like rutabaga.

PLANTS (continued)

Spermatophyta (continued)
- Parsley family (continued)
  - Mackenzie Water Hemlock (Cicuta mackenziana) All parts of the plant, but especially the root, contain a resin-like, toxic substance called cicutoxin. A small quantity of the root is sufficient to cause death.
  - Sea Coast Angelica (Angelica lucida) The young stems and leaf-stalks may be peeled and eaten raw; they have a strong celery-like flavor. The leaves are edible when cooked, or boiled with fish.
  - Western Hemlock-Parsley (Conioselinum benthami)
- Pine family (Pinaceae)
  - Sitka Spruce (Picea sitchensis)
  - White Spruce (Picea glauca)
- Pink family (Caryophyllaceae)
  - Moss Campion (Silene acaulis)
  - Seabeach Sandwort (Honkenya peploides)
  - Snow Pearlwort (Sagina intermedia)
- Plaintain family (Plantaginaceae)
  - Seaside Plantain (Plantago juncoides) Similar species are used raw or cooked.
- Polemonium family (Polemoniaceae)
  - Greek Valerian (Polemonium acutiflorum)
  - Greek Valerian (Polemonium pulcherrimum)
  - Northern Greek Valerian (Polemonium boreale)
- Poppy family (Papavaraceae)
  - Alaska Poppy (Papaver alaskanum)
- Primrose family (Primulaceae)
  - Star flower (Trientàlis europea arctica)
- Pulse family (Leguminosae)
  - Beach Pea (Lathyrus maritimus)
  - Blackish Oxytrope (Oxytropis nigrescens) Several species of this genus are toxic. The root is eaten by the Eskimos of Barter Island. If used in emergencies, it should be taken in small amounts.
  - Nootka Lupine (Lupinus nootkatensis) The roots are eaten by the Aleuts, either raw or cooked, after being carefully scraped to remove the skin. However, excessive amounts are believed to produce fatal inflammation of the stomach and intestines.
  - Wild Pea (Lathyrus palustris)
- Purslàne family (Portulacaceae)
- Rose family (Rosaceae)
  - Beauverd Spiraea (Spiraea beauverdiana)

PLANTS (continued)

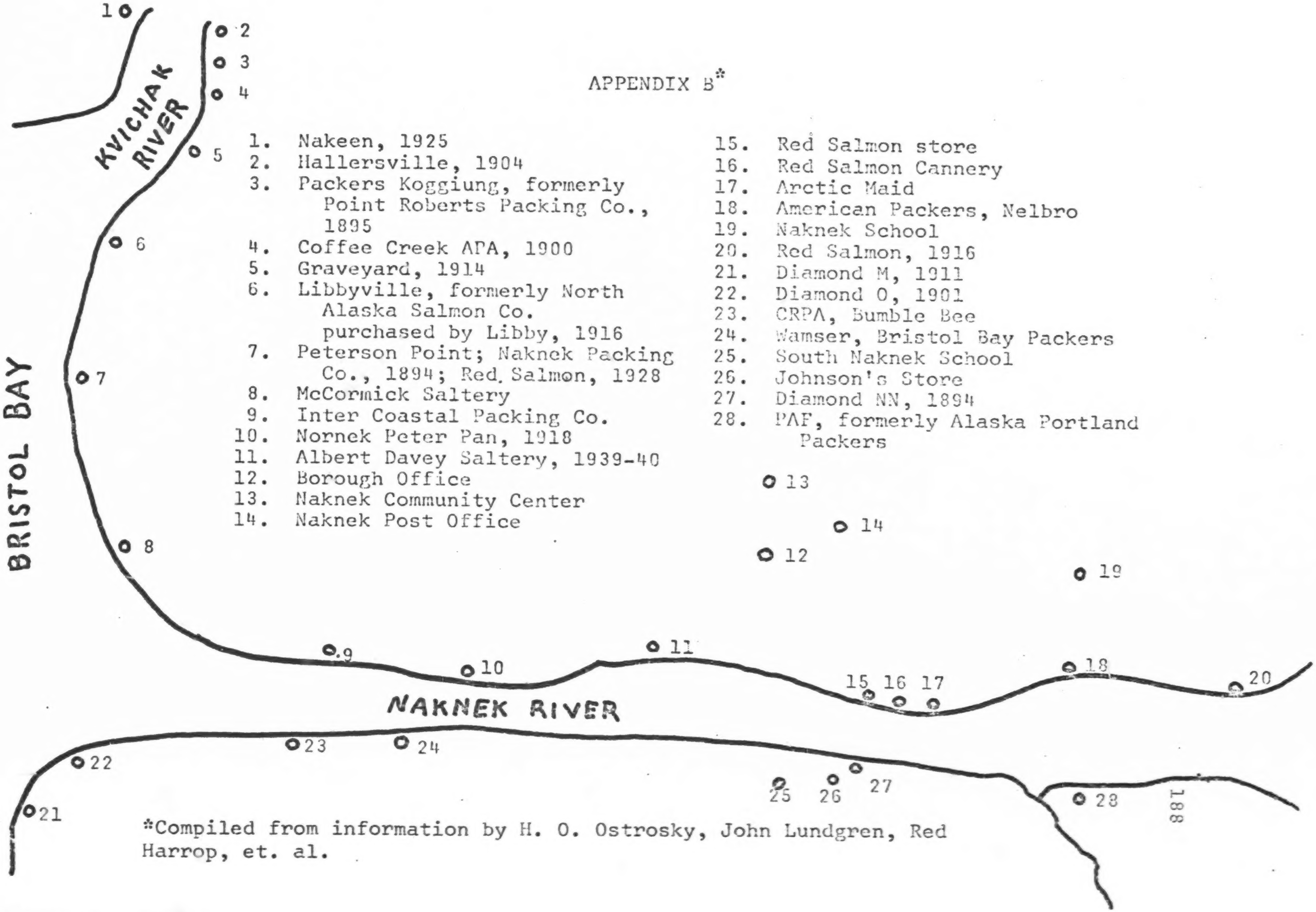
Spermatophyta (continued)
- Rose family (continued)
  - Caltha-leaved Avens (Geum calthifolium)
  - Cinquefoil (Potentilla)
  - Eight-petaled Mountain Avens (Dryas octapetala punctata)
  - Hooker Cinquefoil (Potentilla hookeriana)
  - Luetkea (Luetkea pectinata)
  - Marsh Cinquefoil (Potentilla palustris)
  - Menzies Great Burnet (Sanguisorba mensiesii)
  - Nagoon Berry (Rubus Stellatus)
  - Rough Cinquefoil (Potentilla monspeliensis)
  - Shrubby Cinquefoil (Potentilla fruticosa)
  - Sitka Great Burnet (Sanguisorba sitchensis)
  - Villous Cinquefoil (Potentilla villosa)
- Rush family (Juncaceae)
  - Baltic rush (Juncus balticus)
  - Chestnut Rush (Juncus castaneus)
  - Sickle-leaved rush (Juncus falcatus)
  - Small-flowered Wood-rush (Luzula parviflora)
  - Thread rush (Juncus filiformis)
- Saxifrage family (Saxifragaceae)
  - Alpine Heuchere (Heuchere glabra)
  - Brooks Saxifrage (Saxifraga punctata) The young leaves are palatable (raw) and a good source of Vitamin C and pro-Vitamin A.
  - Northern grass-of-Parnassus (Parnassia palustris)
- Sedge family (Cyperaceae)
  - Tall cotton-grass (Eriophorum angustifolium) Basal 4 or 5 inches of stem may be eaten raw. The underground stems are cached by mice and are edible; the black outer segments may be removed by dipping in boiling water.
  - There are 10 other species of sedge.
- Violet family (Violaceae)
  - Stream violet (Viola glabella)
- Wax-Myrtle family (Myricaeae)
  - Sweet Gale (Myrica gale)
- Willow family (Salicaceae)
  - Arctic Willow (Salix arctica)
  - Balsam Poplar (Populus tacamahacca) The gummy balsam from the buds is useful as a salve for insect bites.
  - Beautiful Willow (Salix pulchra) Young stems, leaves, and underground shoots are edible raw, and excellent sources of Vitamin C.

PLANTS (continued)

Spermatophyta (continued)

- Willow family (continued)
    - Felty-leafed Willow (Salix alaxensis). The inner bark in winter and spring is sweet and edible. Young new shoots and leaves are excellent sources of Vitamin C.
    - Long-beaked Willow (Salix Bebbiana)
    - Sitka Willow (Salix sitchensis)
- Wintergreen family (Pyrolaceae)
    - Liver-leafed Wintergreen (Pyrola asarifolia incarnata)
    - Single Delight (Moneses uniflora)

APPENDIX B*


KVICHAK RIVER
BRISTOL BAY
NAKNEK RIVER
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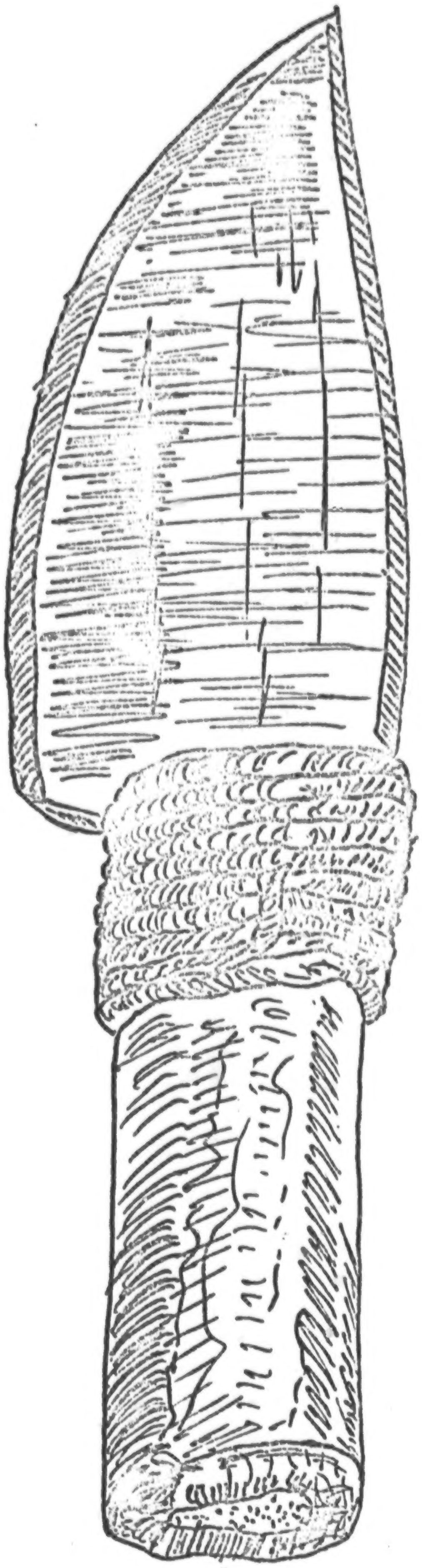
1. Nakeen, 1925
2. Hallersville, 1904
3. Packers Koggiung, formerly Point Roberts Packing Co., 1895
4. Coffee Creek APA, 1900
5. Graveyard, 1914
6. Libbyville, formerly North Alaska Salmon Co. purchased by Libby, 1916
7. Peterson Point; Naknek Packing Co., 1894; Red Salmon, 1928
8. McCormick Saltery
9. Inter Coastal Packing Co.
10. Nornek Peter Pan, 1918
11. Albert Davey Saltery, 1939-40
12. Borough Office
13. Naknek Community Center
14. Naknek Post Office
15. Red Salmon store
16. Red Salmon Cannery
17. Arctic Maid
18. American Packers, Nelbro
19. Naknek School
20. Red Salmon, 1916
21. Diamond M, 1911
22. Diamond O, 1901
23. CRPA, Bumble Bee
24. Wamser, Bristol Bay Packers
25. South Naknek School
26. Johnson's Store
27. Diamond NN, 1894
28. PAF, formerly Alaska Portland Packers

*Compiled from information by H. O. Ostrosky, John Lundgren, Red Harrop, et. al.

APPENDIX C

ARTIFACTS FROM PAVIK



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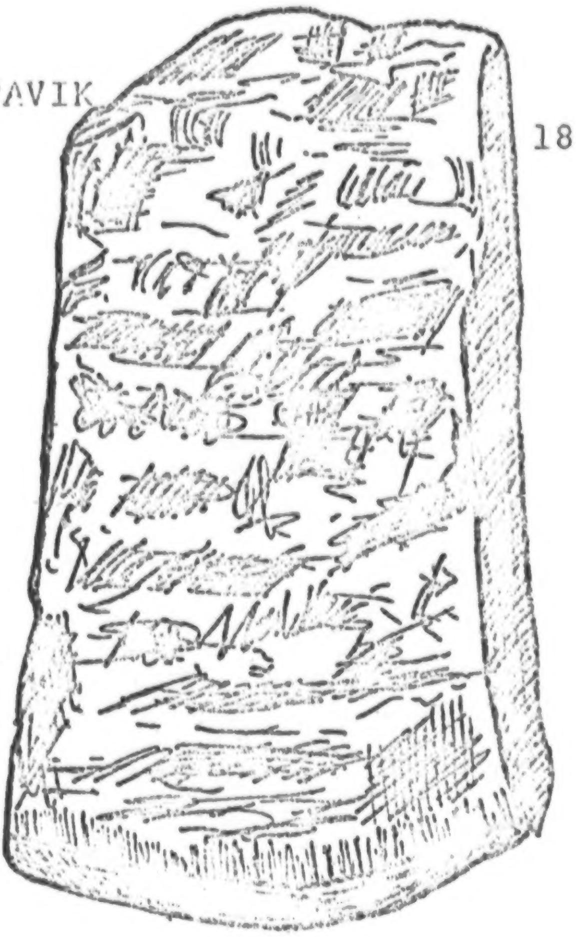

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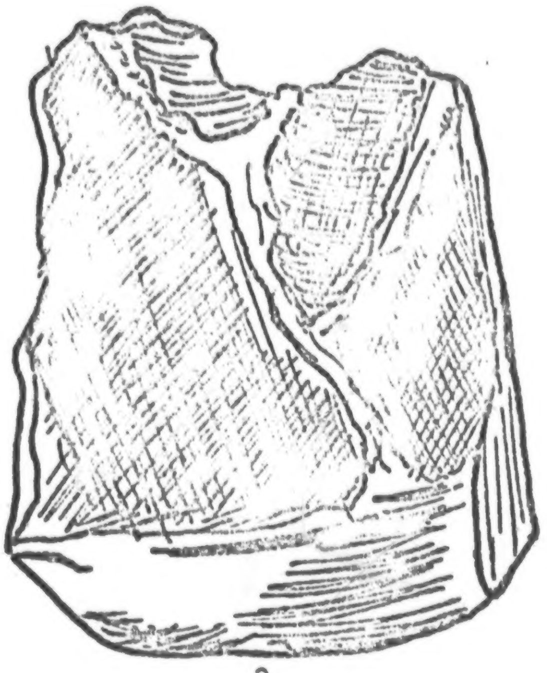

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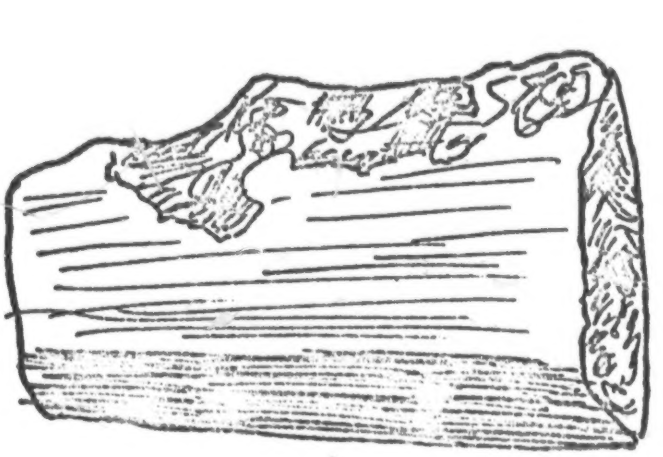

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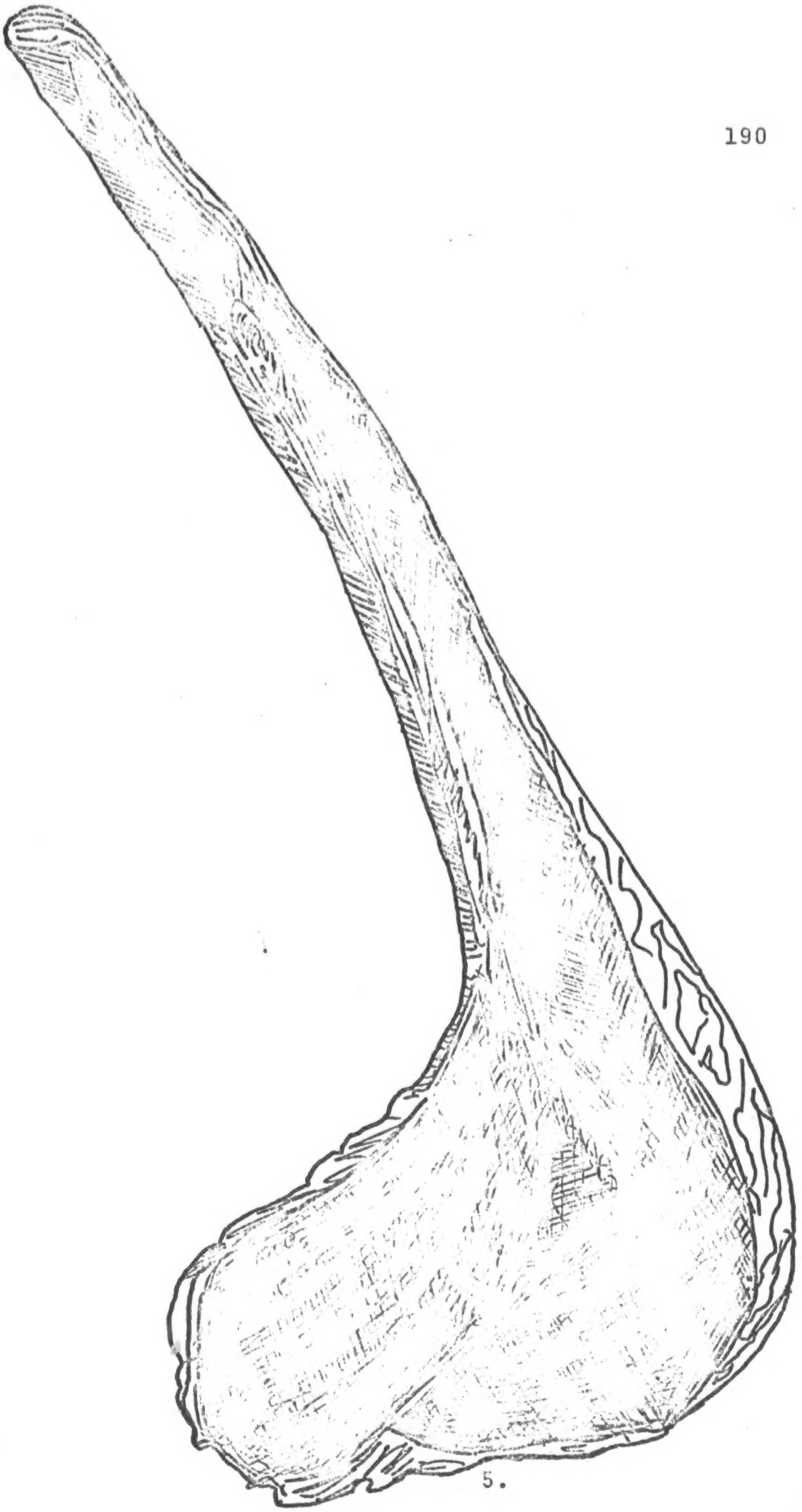

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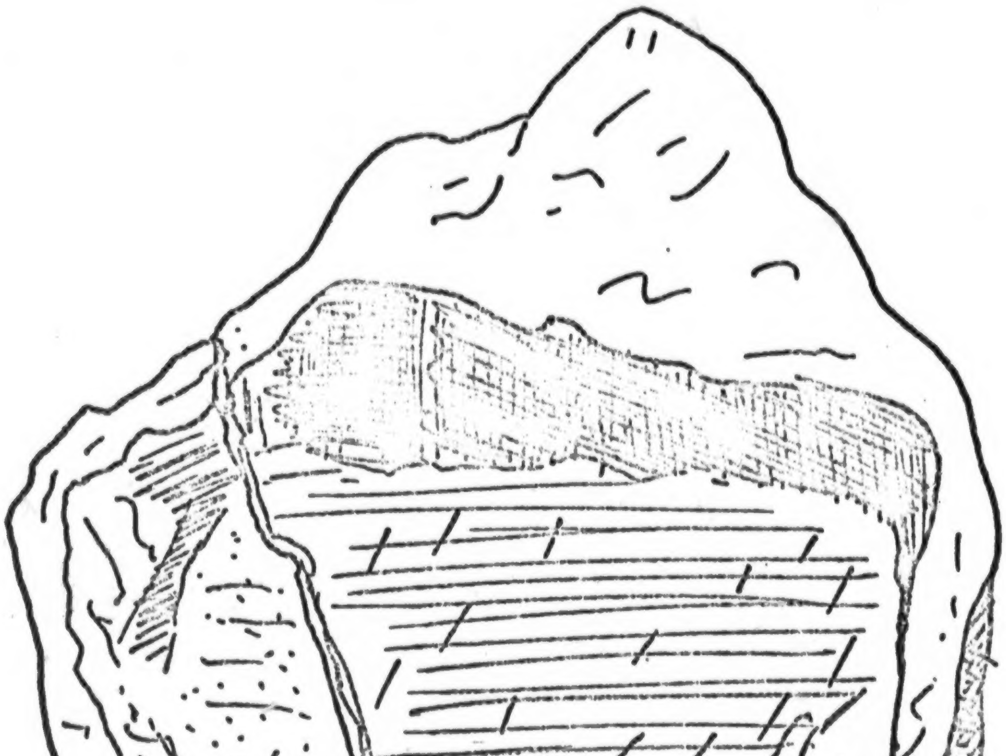

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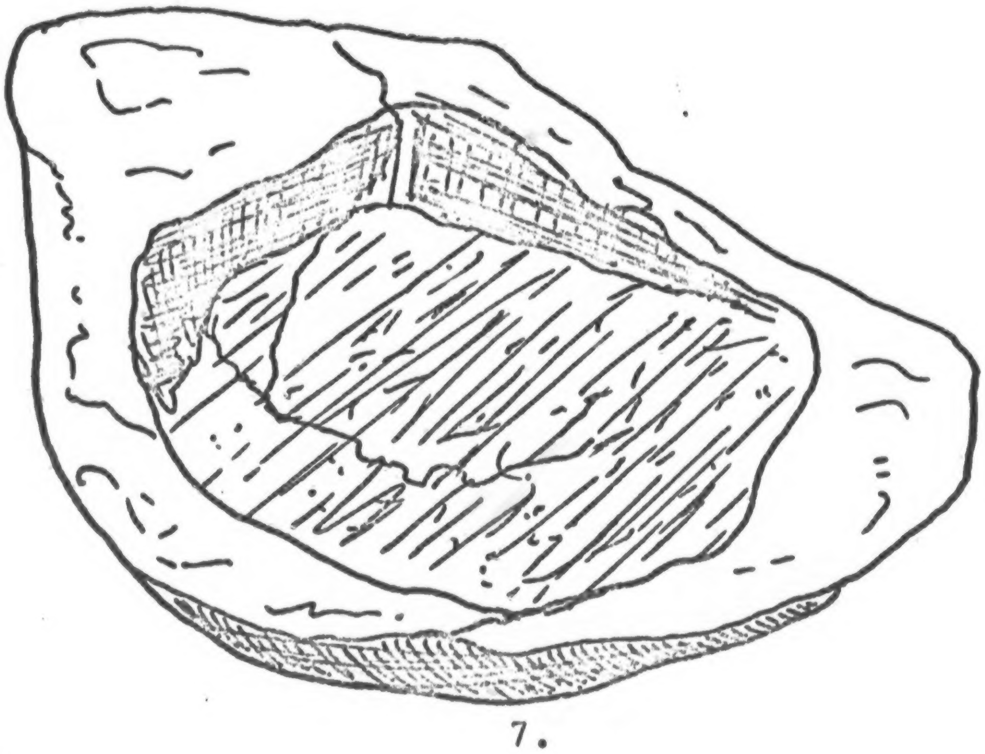

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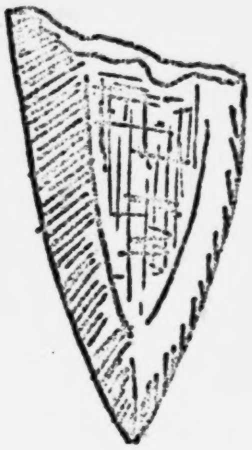

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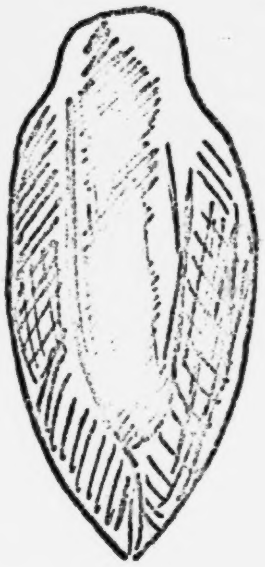

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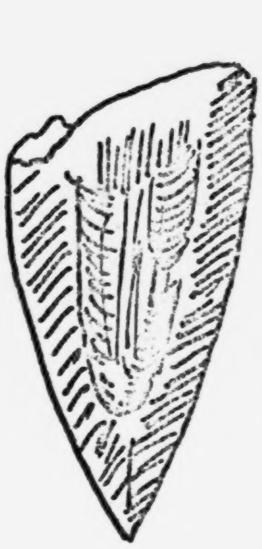

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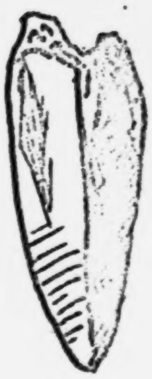

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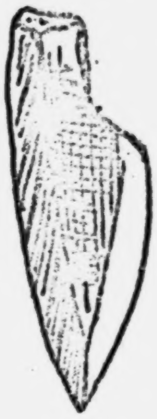

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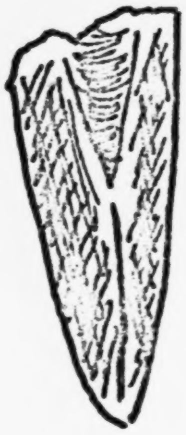

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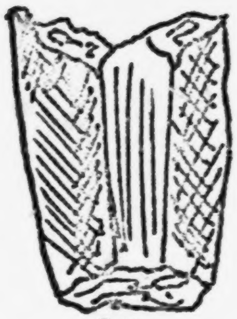

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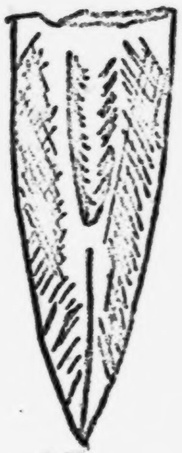

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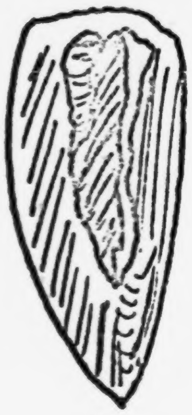

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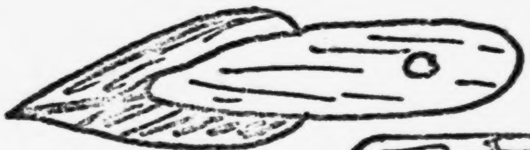

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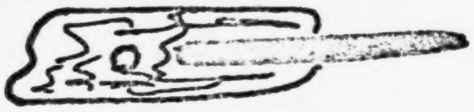

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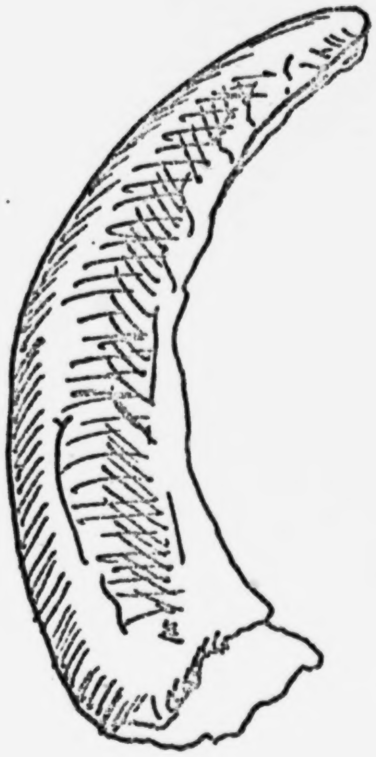

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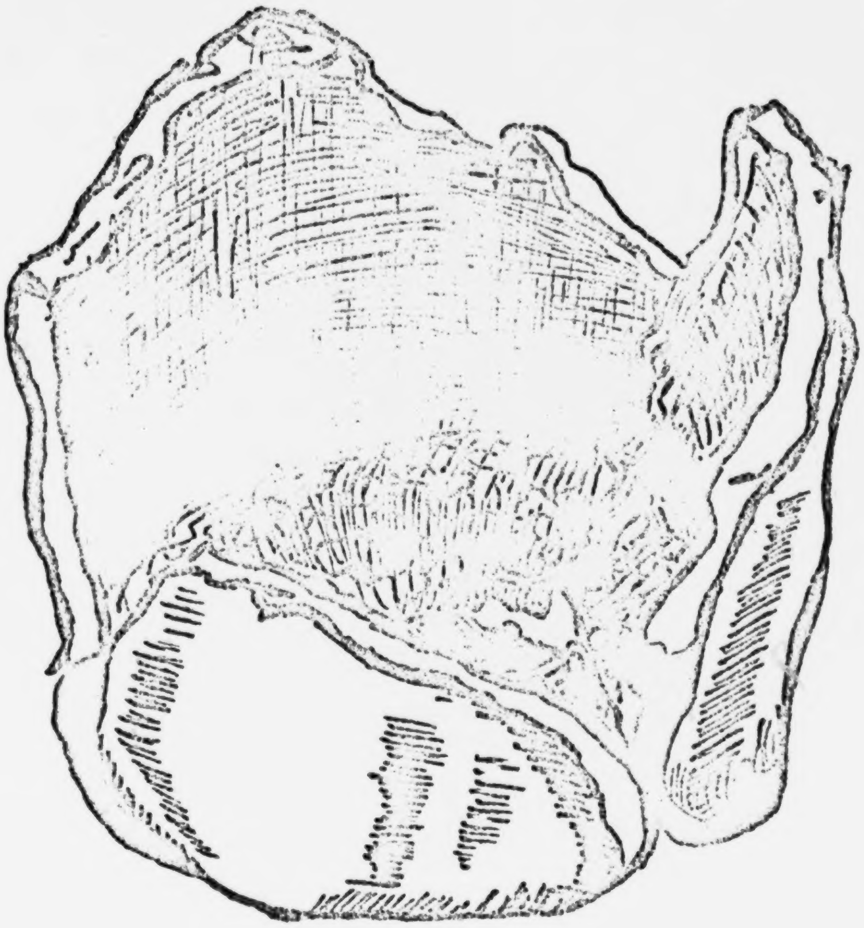

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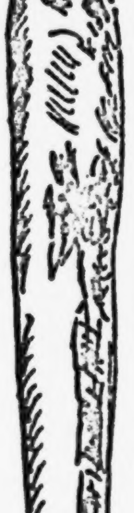

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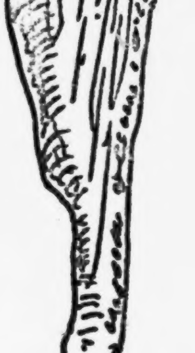

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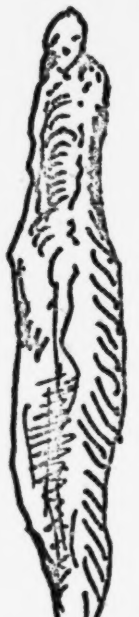

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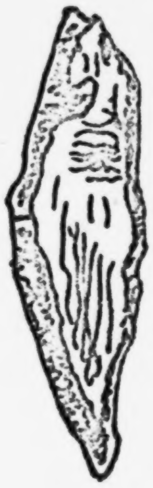

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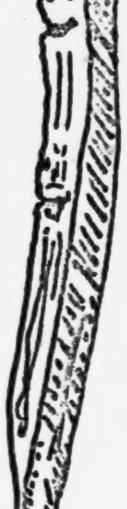

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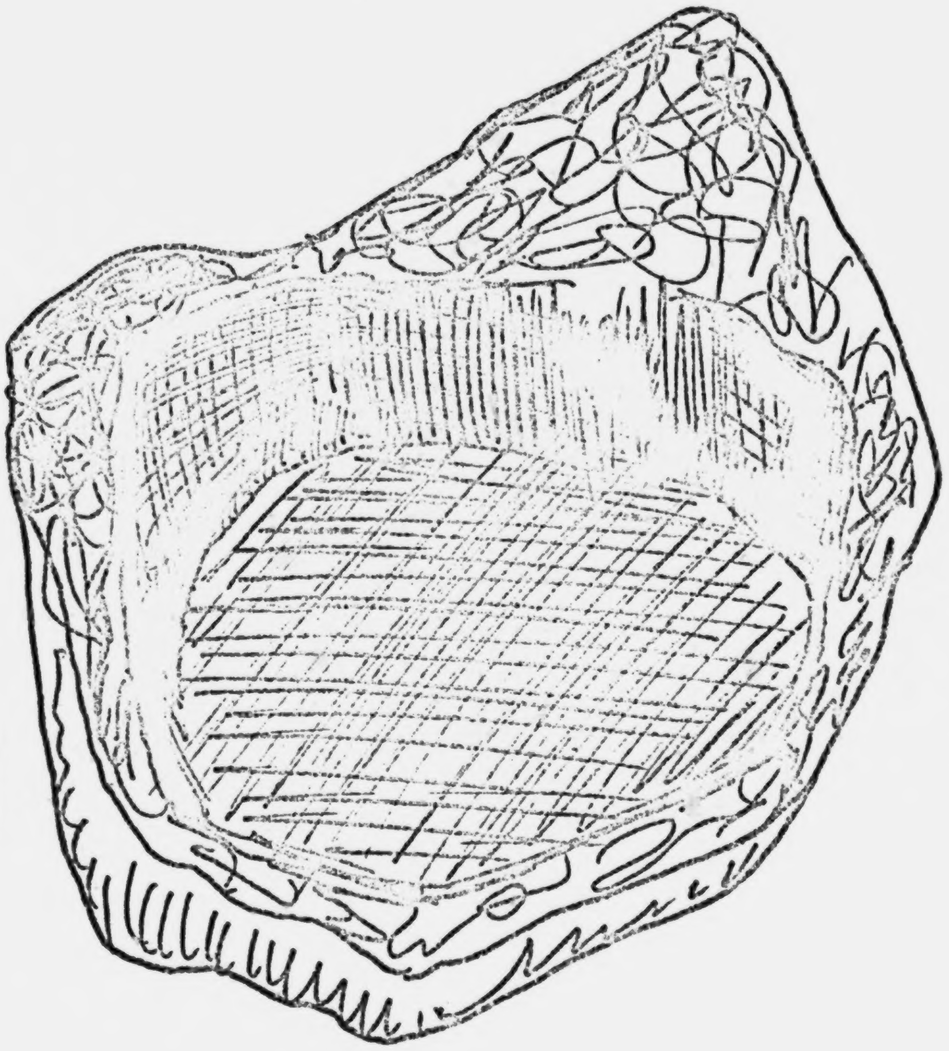

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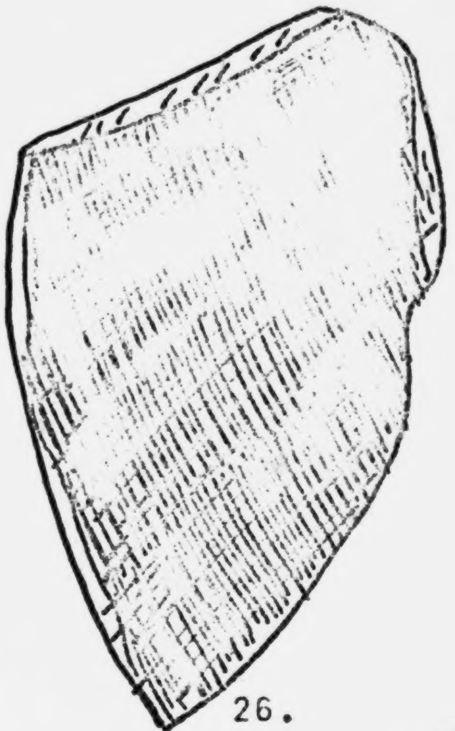

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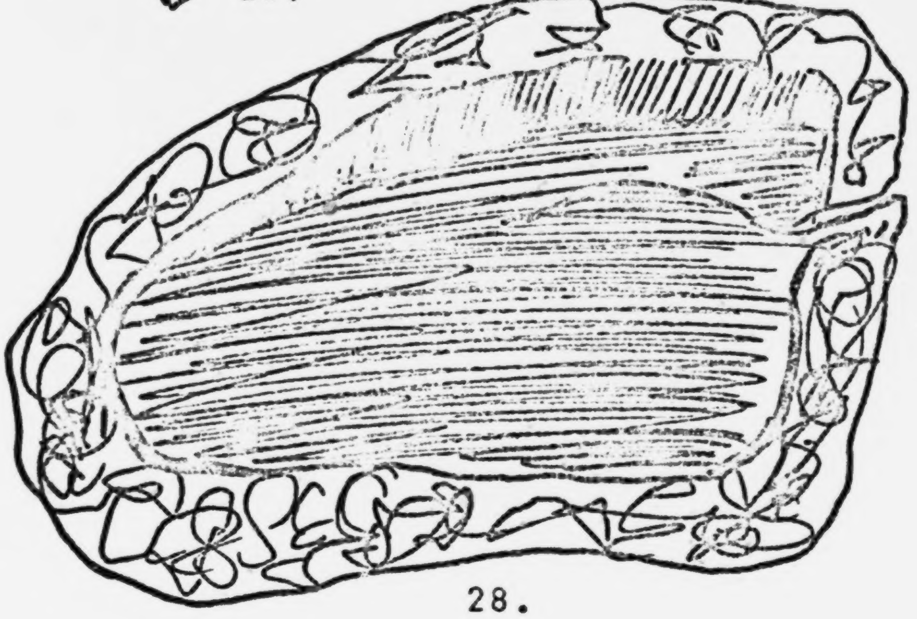

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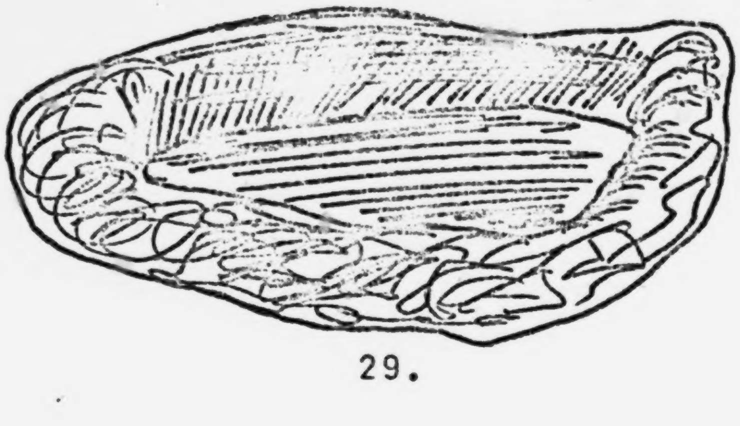

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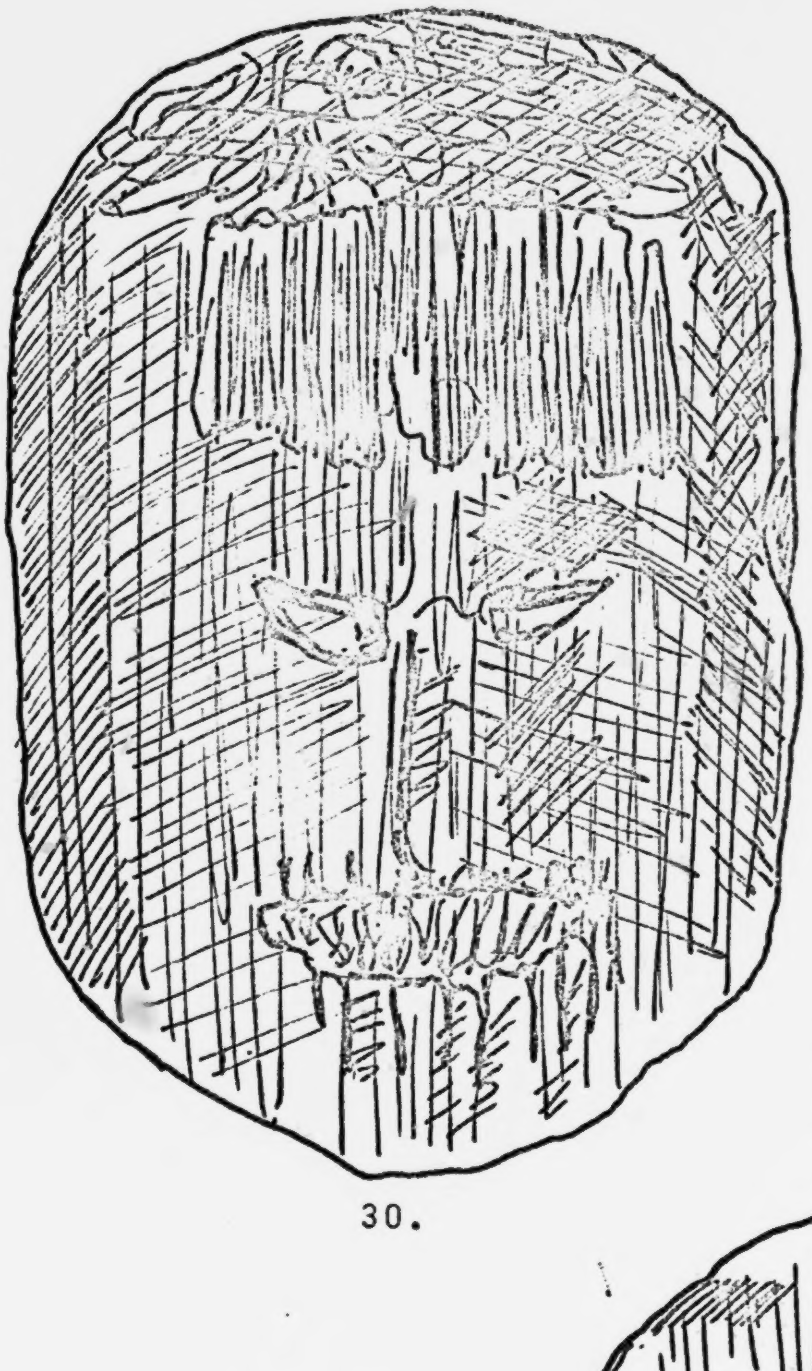

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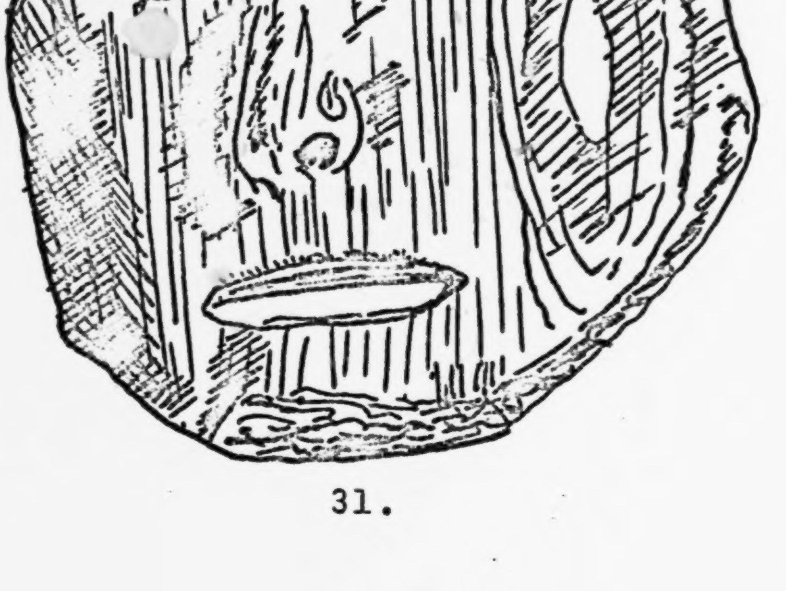

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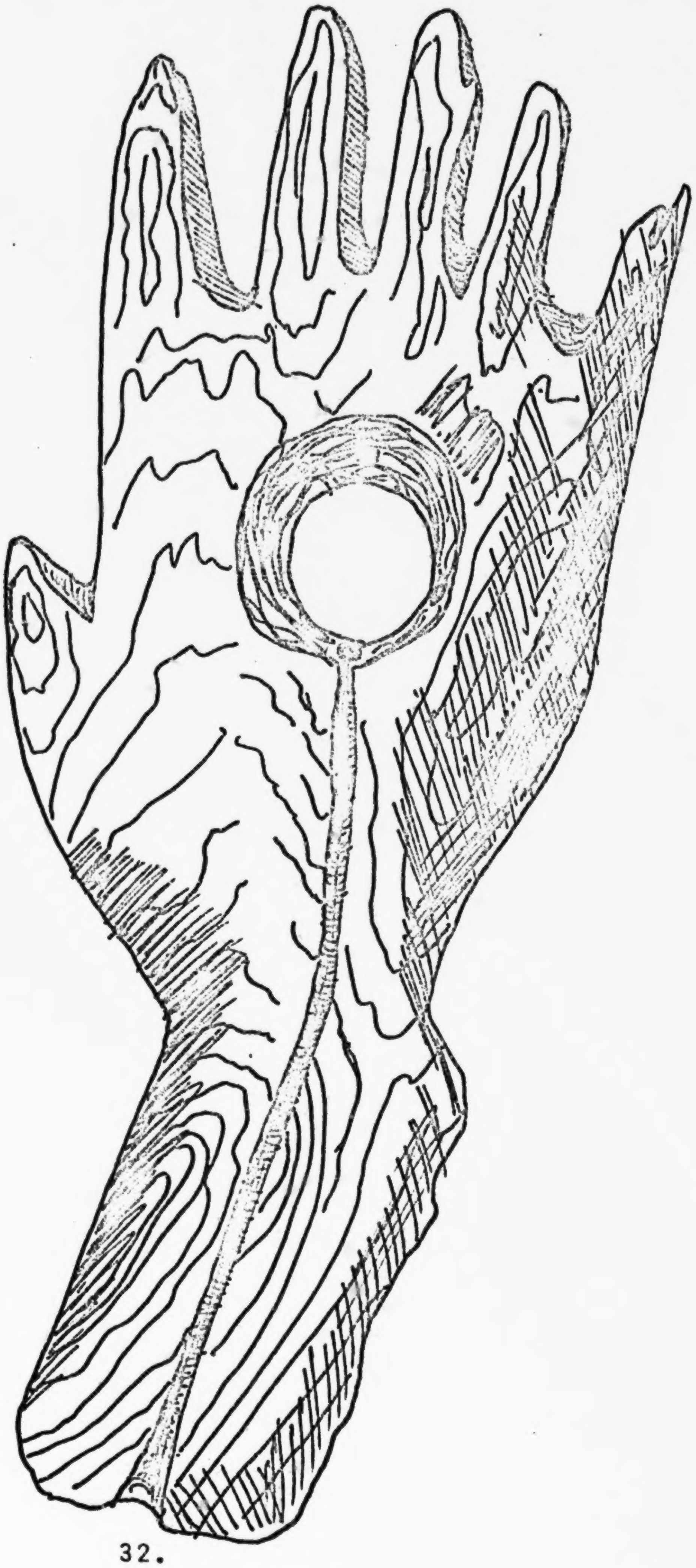

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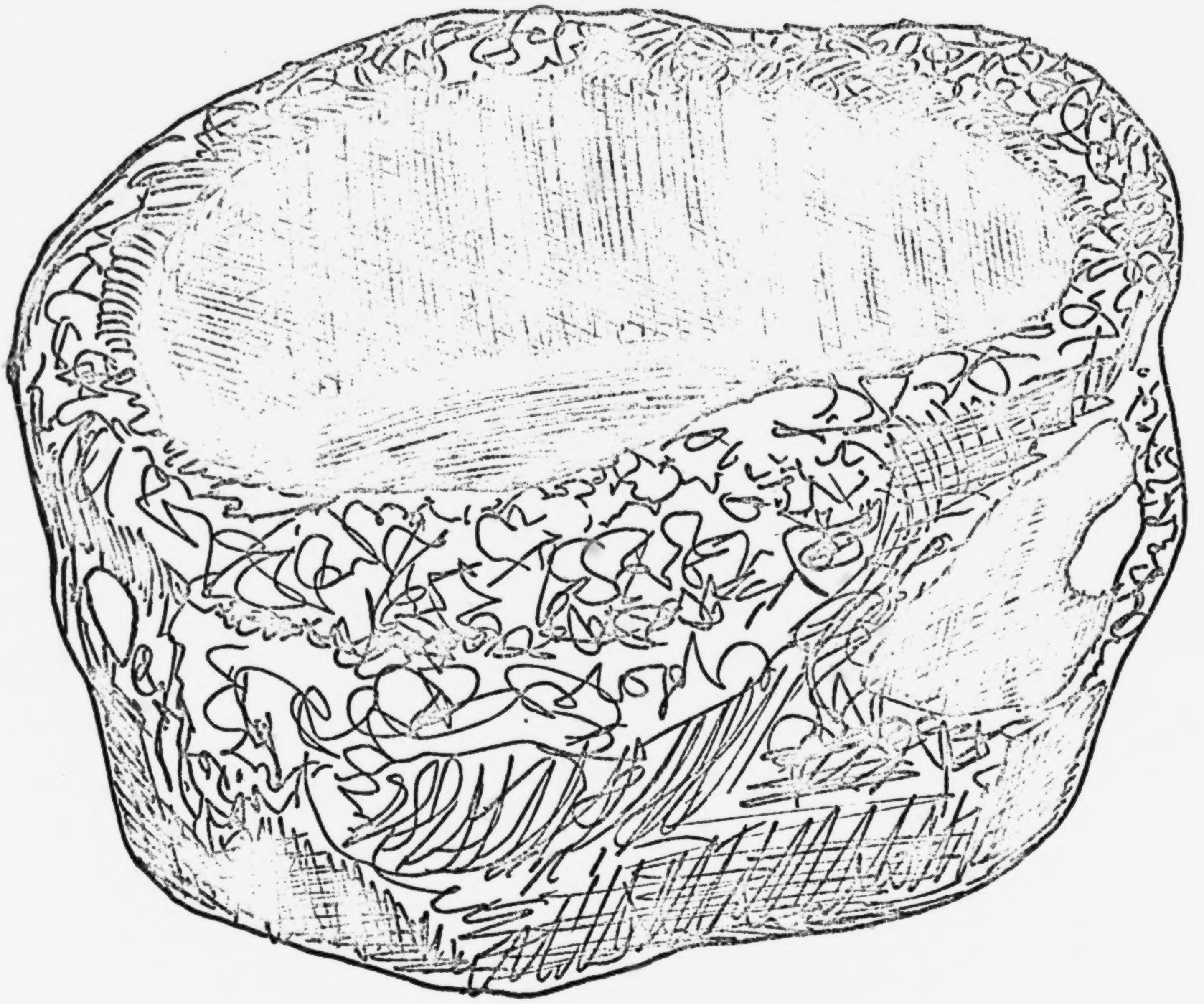

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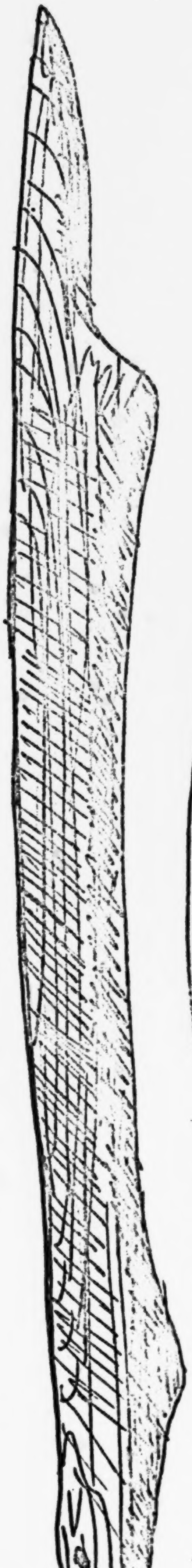

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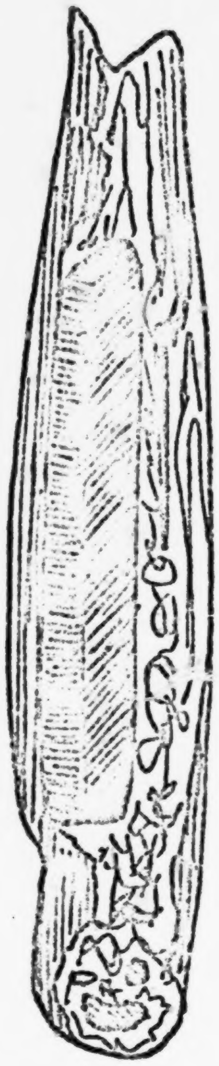

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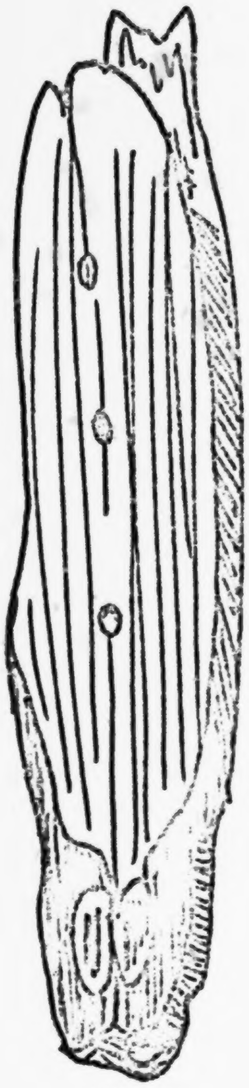

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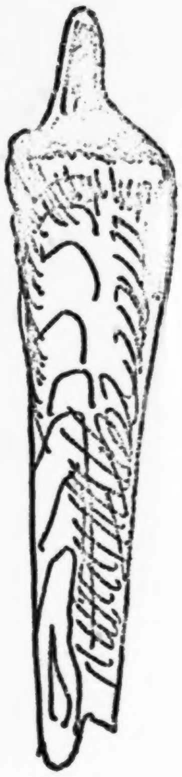

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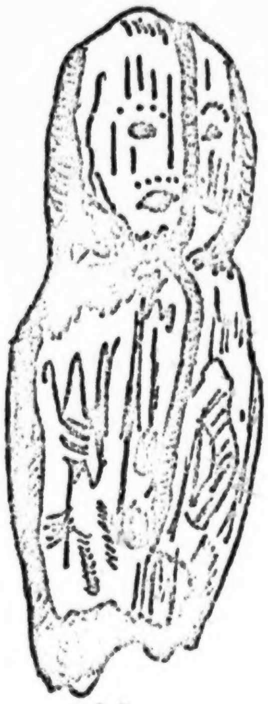

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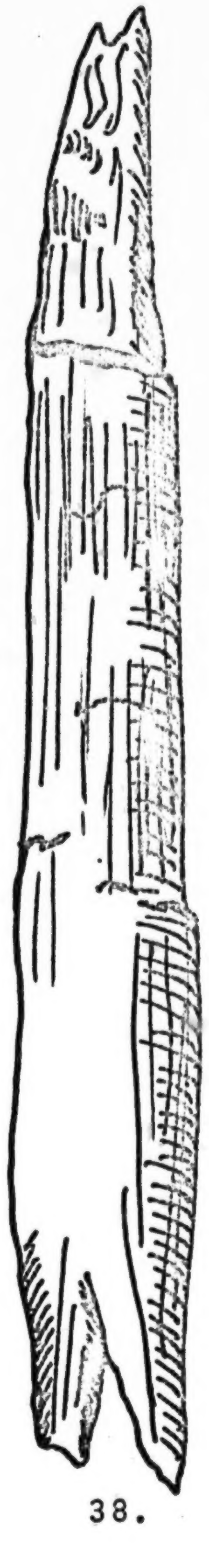

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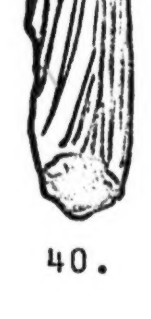

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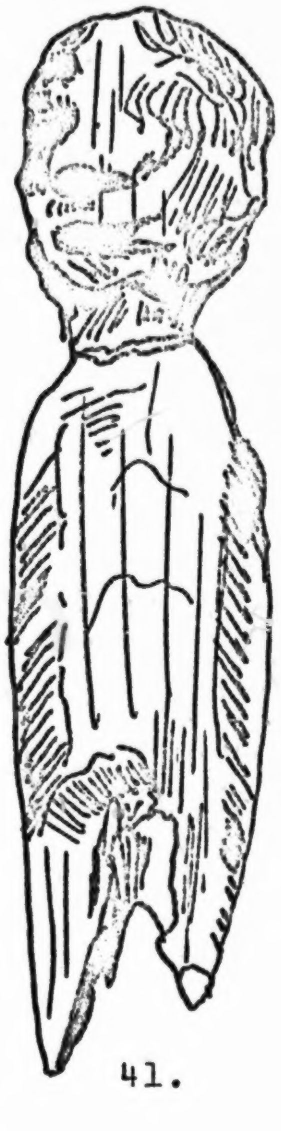

41.

KEY TO APPENDIX C

1. Reproduction of knife. Ground slate blade, caribou horn handle

2. Ground slate adze

3. Ground slate adze

4. Ground slate adze

5. Wooden spoon

6, 7. Two views of stone lamp

8-16. Ground slate projectile points

17, 18. Harpoon heads with slate blades

19. Bear claw

20. Base of pottery vessel

21-24. Bone awls

25. Leister prong

26. Ground slate knife blade

27. Stone lamp

28. Stone lamp

29. Stone lamp

30. Wooden mask

31. Wooden mask

32. Wooden mask

33. Whale vertebra bowl

34. Wooden figure (otter?)

35. Bone box carved in form of walrus (bottom view)

36. Bone box (top view)
37. Bone toggle
38. Wooden figure
39. Wooden doll
40. Wooden doll
41. Wooden doll

APPENDIX D

ARCHAEOLOGICAL SURVEY*

Volcanic Ash Deposit	Cultural Phase	Relevant C-14 Dates
	(recent)	
A.-(1912)		
	(recent)	
	Pavik	Period of Russian contact
	Bluffs	
B.-(c.1750)		
	Bluffs	A.D.1470±90:1510±60:1720±80
C.-(c.1450)		
	Camp Falls	A.D.1270±90:1650±75
D.-(c.1050)		
	Falls	A.D.750±170:775±125:975 ±120
	Weir	
E.-(c.A.D.1)		A.D.100±100:720±150 160±350B.C.
	Smelt Creek	
F.-(c.100B.C.)?		
	Hilltop	1175±200B.C.:1138±200 B.C.
	Gravels	
G.-(c.1900B.C.)?		1200±200B.C.:1100±250B.C. 1910±90B.C. (date on peat surrounding ash G in a bog)
	Gravels	2022±440B.C.
H.-(c.3000B.C.)?		
I.-(c.4000B.C.)?		
J.-(c.5000B.C.)?		5410-250B.C. (date on non-cultural charcoal underlying ash J at site BR5)

*According to Dumond, Human Prehistory in the Naknek Drainage Area.

APPENDIX E

SUPPLEMENTARY BIBLIOGRAPHY: MATERIALS FOR AN ALASKAN HIGH SCHOOL LIBRARY PROJECT

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